United States Department of the Interior
Bureau of Land Management

Little Fish Lake Joint Management Area
Wild Horse Gather Plan
Final
Environmental Assessment
DOI-BLM-NV-B020-2022-0030-EA

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BLM

1.0 Introduction

This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental effects of the Proposed Action, which consists of gathering and removing excess wild horses from the Little Fish Lake Herd Management Area (HMA) along with population growth suppression methods. The gather and removal of excess wild horses from the U.S. Forest Service's (USFS) Little Fish Lake Wild Horse Territory (WHT) is also included in the Proposed Action. The Little Fish Lake WHT is managed in accordance with an Interagency Agreement between the BLM and the USFS as a Joint Management Area (JMA) and is included for informational purposes and cumulative impact analysis. Refer to Map 1 below, which displays the HMAs and WHT included within the JMA.

The wild horse gather plan would allow for an initial gather or gathers in order to achieve Appropriate Management Levels (AMLs) and apply fertility control treatments, as well as follow-up gathers in order to maintain AMLs over the life of the plan and to continue fertility control management. This EA will assist the Bureau of Land Management (BLM) Tonopah Field Offices (TFO) and USFS Austin-Tonopah Ranger District (ATRD) in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any significant effects could result from the analyzed actions. Following the requirements of NEPA (40 CFR 1508.9 (a)), this EA describes the potential impacts of a No Action Alternative and the Proposed Action for the Little Fish Lake JMA. If the BLM and USFS determine that the Proposed Action for the JMA is not expected to have significant impacts a Finding of No Significant Impact (FONSI) would be issued, and a Decision Record would be prepared for each agency. If significant effects are anticipated, the BLM would prepare an Environmental Impact Statement.

This document conforms to the following documents:

- The Tonopah Resource Management Plan (RMP) and subsequent Record of Decision dated October 1997.
- Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment (BLM 2015).
- Toiyabe National Forest Land and Resource Management Plan, as amended (LRMP) dated 1986.

1.1 Background

The project area includes both the BLM and U.S Forest Service portions of Little Fish Lake Valley. The Little Fish Lake HMA and WHT are located approximately 70 miles northeast of Tonopah in Nye County, Nevada, and primarily confined to the valley bottoms of the Little Fish Lake Valley. The Little Fish Lake JMA contains portions of the Monitor Range to the west and the Hot Creek Range to the east, and is bordered by the Seven Mile HMA to the north and the Stone Cabin HMA to the south. Table 1, below, displays the total acreage and established AML for the HMA and WHT that make up the JMA.

The proposed wild horse gathers of the Little Fish Lake HMA and WHT would be conducted in coordination and in conjunction between the Tonopah Field Office and Austin-Tonopah Ranger District, due to historic movement and continuing interchange of wild horses between the HMA (approximately 28,700 acres of private/public land) and the WHT (approximately 88,300 acres of private/public land) (See Map 1). The wild horses from Little Fish Lake HMA travel back and forth across the Little Fish Lake WHT boundary lines, mixing with the wild horses from the WHT. The population within the boundaries of these administrative areas can fluctuate depending on the seasonal movement of these wild horses.

Since the passage of the *Wild Free-Roaming Horses and Burros Act of 1971* (WFRHBA), management knowledge regarding wild horse population levels has increased. For example, it has been determined that wild horses are capable of increasing their numbers by 15% to 25% annually, resulting in the doubling of wild horse populations about every 4 years (NRC 2013, Ransom et al. 2016). This has resulted in the BLM shifting program emphasis beyond just establishing AML and conducting wild horse gathers to include a variety of management actions that further facilitate the achievement and maintenance of viable and stable wild horse populations and a "thriving natural ecological balance". Management actions resulting from shifting program emphasis include increasing fertility control, adjusting sex ratios and collecting genetic baseline data to support genetic health assessments.

Further evidence of the shift in program emphasis beyond just establishing AML can be seen when examining the Standards and Guidelines for Wild Horse and Burro Management from the Mojave-Southern Great Basin and Northeastern Great Basin Resource Advisory Council (RAC) standards and guidelines for rangeland health (section 1.0 SI document). Under the RAC, guidelines for the Wild Horses and Burros Standard guideline 4.7 which states: "Wild horse and burro herd management practices should address improvement beyond this standard, significant progress toward achieving standards, time necessary for recovery, and time necessary for predicting trends".

The AML is defined as the number of wild horses that can be sustained within a designated HMA which achieves and maintains a thriving natural ecological balance[1] in keeping with the multiple-use management concept for the area. The Little Fish Lake AML was established through a stipulated agreement (Consent Decision May 11, 1992) between BLM, E. Wayne Hage, Colvin and Son Cattle Co., and Russell Ranches through the Department of the Interior Office of Hearings and Appeals, Departmental Cases Hearings Division. That agreement established AML for the Allotment as a single number of 132 wild horses. The Allotment was divided in 1989 and a portion of those lands were transferred to USFS and the AML was divided accordingly to reflect an AML of 93 horses for the USFS lands and 39 horses for the BLM-managed lands. The 1997 Tonopah RMP and Record of Decision confirmed that an AML of 39 horses remains appropriate for the portion of land that remains under the jurisdiction of the BLM.

The Tonopah Resource Management Plan and Record of Decision of 1997 determined that "When the appropriate management level*** is exceeded, remove wild horses and/or burros to a point which may allow up to three years of population increase before again reaching the appropriate management level...". "Low AML [2]" in this case, is the number which allows up to 3 years of population growth after excess animals have been removed, which equates to 79 wild horses for the JMA. In order to not exceed the number set by stipulated agreement but still allow for three years of population growth as provided for in the Tonopah RMP, AML range for the JMA is 79-132.

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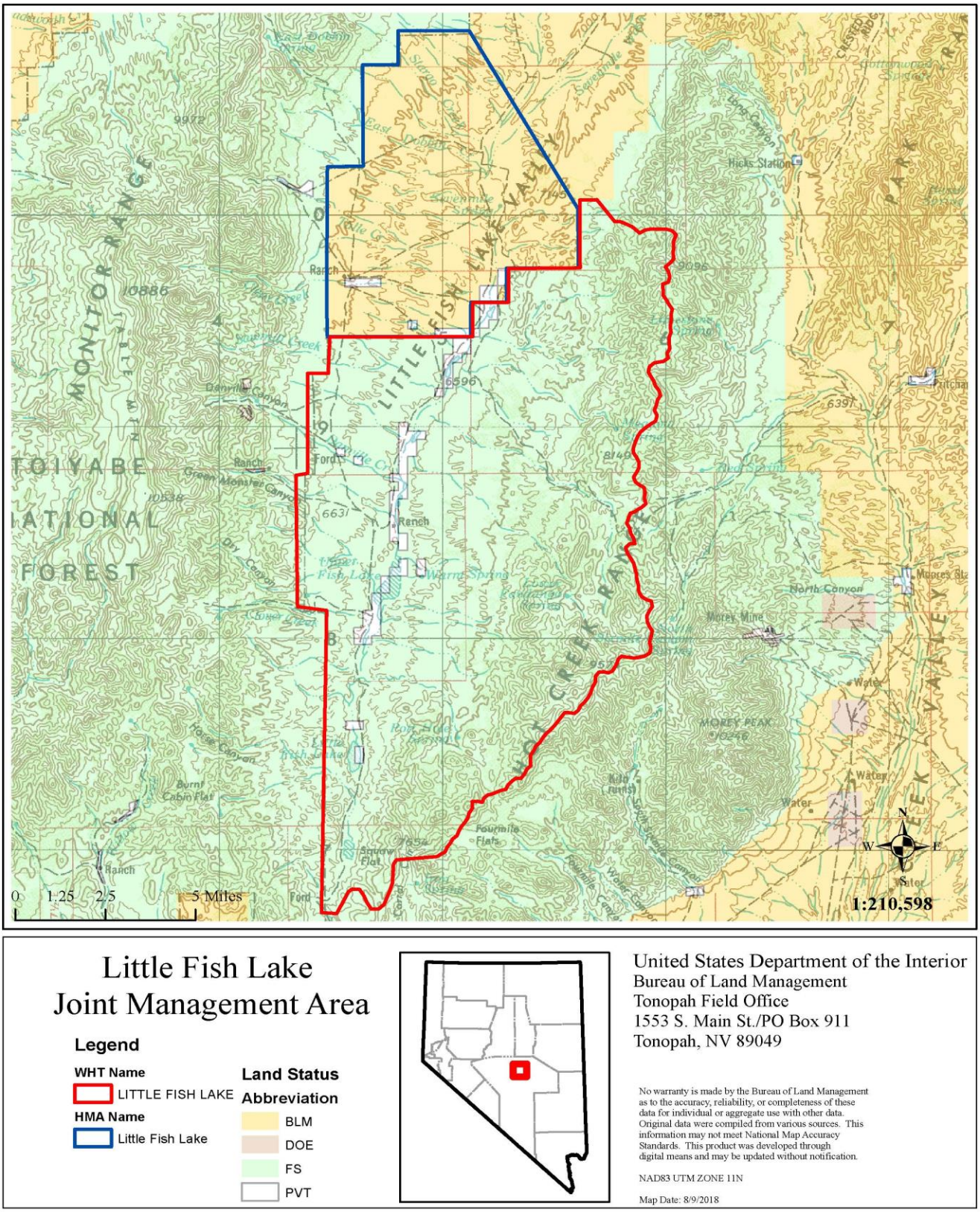
[1] The Interior Board of Land Appeals (IBLA) defined the goal for managing wild horse (or burro) populations in a thriving natural ecological balance as follows: "[T]he 'benchmark test' for determining the suitable number of wild horses on the public range is 'thriving ecological balance.' In the words of the conference committee which adopted this standard: 'The goal of wild horse and burro management should be to maintain a thriving ecological balance between wild horse and burro populations, wildlife, livestock and vegetation, and to protect the range from the deterioration associated with overpopulation of wild horses and burros.'" *Animal Protection Institute of America*, 109 IBLA 112, 115 (1989).

[2] The Tonopah Resource Management Plan and Record of Decision of 1997 determined that "When the appropriate management level*** is exceeded, remove wild horses and/or burros to a point which may allow up to three years of population increase before again reaching the appropriate management level...".

The Tonopah RMP stated that adjustments to AML would be based on monitoring and grazing allotment evaluations. A Rangeland Health Evaluation is currently scheduled for the grazing allotments associated with the Little Fish Lake HMA. At present, historical monitoring data, and current monitoring data do not indicate that an increase or decrease of the existing AML is warranted. However, achieving and maintaining AML is critical for the conservation of rangeland resources and healthy wild horses.



Map 1. Little Fish Lake Joint Management Area.

Table 1. Joint Management Area, Acres, AML, Estimated Population, minimum number for removal to reach low AML under the Proposed Action (Alternative A).

Herd	Total Acres Private/Public land	Appropriate Management Level	2021 Estimated Population	2022 Estimated Population	Removal to Achieve Low AML[3]
Little Fish Lake HMA	28,744	39	138	166	142
Little Fish Lake WHT	88,297	93	153	184	129
Total	117,041	132	291	350	271

An aerial survey of the project area was conducted in March of 2021. The survey adhered to US Geological Survey (USGS) Standard Operating Procedures for double-observer aerial surveys (Griffin et al. 2020). During that survey, observers recorded 242 adult wild horses. This number was the 'direct count' of every horse seen on the flight and does not account for horses that were present in the project area but unseen due to weather or environmental conditions. Because of this, direct counts can significantly undercount the actual number of animals present. Thus, the actual number of wild horses in the surveyed area in March 2021 was some number that is larger than 242. In Table 1, the expected herd size for March of 2021 is based on the observed direct count from the survey with the addition of a 20% annual herd growth rate. The estimated population size for 2022 reported in Table 1 is from the 2021 estimate plus the addition of a 20% annual herd growth rate to include the 2022 foal crop.

There is currently no Herd Management Area Plan (HMAP) in place for the Little Fish Lake HMA. The Interior Board of Land Appeals has held that an HMAP is not a prerequisite to BLM conducting a gather operation (*Animal Protection Institute of America*, 109 IBLA 112, 127 (1989)), so long as the record otherwise substantiates compliance with the WFRHBA. Based on all available information, BLM has determined under the WFRHBA that excess wild horses are present and that a gather for removal of excess animals and application of population control measures is necessary to achieve a thriving natural ecological balance. While BLM has not prepared a formal HMAP document, the major components of an HMAP have nonetheless been addressed by BLM, including the establishment of the HMA, AML and objectives for managing the JMA (through the Tonopah RMP and other decision documents), monitoring and evaluating whether management objectives are being met (as summarized in this NEPA document), and establishing a ten-year management plan (through the Proposed Action and Alternatives being analyzed). The BLM is also providing an opportunity for public participation through the comment period for this EA.

Based upon all current information available at this time, the BLM has determined that excess wild horses exist within the Little Fish Lake JMA. These excess wild horses need to be removed in order to achieve the established AML, restore a thriving natural ecological balance (TNEB) and prevent further degradation of rangeland resources. This assessment is based on factors including, but not limited to the following rationale:

- Little Fish Lake JMA estimated populations exceed the established AML range for the project area (Table 1).
- Excess wild horses are impacting/damaging private lands within the JMA.
- Moderate, heavy and severe utilization is evident on key forage species within JMA.
- Use by wild horses has caused riparian resource damage at Sevenmile Spring, Clear Creek, and Anderson Field.

[3] As more fully described in the Proposed Action, this number is based on current population counts/estimates. The wild horse population increases each year due to the new foal crop, so the number of horses gathered and removed will likely be higher depending on when the gather takes place.

- Monitoring and historical information indicate that future emergency removals would be necessary due to lack of water and/or forage if gathers are not conducted to reduce the population to AML.
- Animals leaving the JMA boundary and remaining outside of HMAs/WHTs is indicative of insufficient habitat for the current population of horses.

1.2 Purpose and Need

The purpose of the Proposed Action is to gather and remove excess wild horses from within and outside the Little Fish Lake JMA. The current wild horse population in the JMA exceeds the Appropriate Management Level by over 200 animals and is growing by 15-25% annually. The excess horses in the JMA are impacting vegetation condition, wildlife habitat, and water quality. There is a need to reduce wild horse populations growth rates in the JMA and maintain the population at or below the established AML.

The need for the action is to prevent undue or unnecessary degradation of the public lands and national forest system lands associated with excess wild horses, and to restore a TNEB and multiple-use relationship on public lands, consistent with the provisions of Section 1333(b) of the WFRHBA. The action would also limit the impacts to private property located in the JMA.

1.3 Land Use Plan Conformance and Consistency with Other Authorities

The Action Alternatives are in conformance with the Wild Horse and Burro Objectives of the Tonopah RMP Record of Decision dated 1997. Pertinent excerpts from that document are the following:

Objective: To manage wild horse and/or burro populations within Herd Management Areas at levels which will preserve and maintain a TNEB consistent with other multiple-use objectives (page 14).

1. Continue the following management determinations:
   a. Manage wild horses and/or burros in 16 HMAs listed in Table 3 of the RMP.
   b. Manage wild horses and/or burros at AML or interim herd size (IHS) for each HMA outlined in Table 3. Future herd size or AMLs within each HMA will be adjusted as determined through short-term and long-term monitoring data methods as outlined in the *Nevada Rangeland Monitoring Handbook* and BLM Technical References.
2. When the AML is exceeded, remove excess wild horses and/or burros to a point which may allow up to three years of population increase before again reaching the AML.

   Within the 1997 RMP the definition of AML is given as "*the maximum number of wild horses and/or burros to be managed within a herd management area and has been set through monitoring and evaluation or court order*" (page 15).

Consistency with Toiyabe National Forest Land and Resource Management Plan, as amended, Direction

The National Forest and Public Lands Enhancement Act of 1988 (P.L. 100-550) transferred approximately 750,000 acres of BLM public lands into the National Forest System on the Toiyabe National Forest, which resulted in the Forest Service assuming management responsibility for large portions of the original Little Fish Lake HMA.

The Little Fish Lake WHT is managed under the *1986 Toiyabe National Forest Land and Resource Management Plan, as amended.* Projects that take place on National Forest System lands are guided by the desired conditions, goals, objectives, management direction, and standards and guidelines set out in the Forest Plan. Key management direction from the Forest Plan related to wild horse and burro management is summarized below.

The Toiyabe Forest Plan at page IV-4 describes how it is the desired condition that management plans will have been approved for all wild and free-roaming horse and burro territories and that wild horse and burro use will have been maintained at pre-existing levels. The plan also provides that the Forest should manage wild free-roaming horses and burros to population levels compatible with resource capabilities and requirements (IV-31).

Wild Free-Roaming Horse and Burros (p. IV-31)

1- Manage wild free-roaming horses and burros in accordance with the Wild Free-Roaming Horse and Burro Act of 1971
2- Carry out interagency agreements with the Inyo National Forest and the BLM
3- Involve interested federal and state agencies and other groups in the management of wild free-roaming horses and burros
4- Manage wild free-roaming horses and burros to population levels compatible with resource capabilities and requirements

Management Area 10 – Monitor

The Forest Plan divides NFS lands in Central Nevada into five sub-units called management areas (MAs). Each Management Area has resource or activity goals and management standards for managing areas in particular ways under management area prescriptions. Specific standards and guidelines for management areas apply in addition to any relevant forest-wide direction. The Little Fish Lake WHT occurs in the Monitor Management Area. Monitor Management Area 10 direction relevant to the project includes (Pages IV-134-137):

- A healthy, diverse wildlife habitat will be provided with emphasis on deer, elk, and upland birds, while also emphasizing livestock grazing. Management will provide for requirements of wild horses.
- Key habitats will be maintained and improved through management of wild horses and livestock. Wildlife habitat improvement projects will be conducted in key areas such as riparian habitat.
- Wild horse herds will be managed cooperatively with the BLM to provide sufficient forage and water for wildlife and domestic livestock, and to maintain soil and vegetation in satisfactory condition. Noxious farm weeds will be controlled.

Greater Sage-Grouse LRMP Amendment #17

On September 16, 2015, the Intermountain Regional Forester signed the Record of Decision (ROD) for the Greater Sage-Grouse Forest Plan Amendment. This ROD amended the Toiyabe Land and Resource Management Plan to include updated management direction designed to conserve, enhance and restore Greater Sage-Grouse habitat. Direction specific to the management of wild horses and burros includes:

GRSG-HB-DC-067-Desired Condition – In priority and general habitat management areas, wild horse and burro populations are within established appropriate management levels.

GRSG-HB-ST-068-Standard – In priority and general habitat management areas, consider adjusting appropriate management levels, consistent with applicable law, if greater sage-grouse management standards are not met due to degradation that can be at least partially be attributed to wild horse or burro populations.

GRSG-HB-ST-069-Standard – In priority and general management areas, remove wild horses and burros outside of a wild horse and burro territory.

GRSG-HB-GL-070-Guideline – In priority and general habitat, herd gathering should be prioritized when wild horse and burro populations exceed the upper limit of the established appropriate management level.

GRSG-HB-GL-071-Guideline – In priority and general habitat, wild horse and burro population levels should be managed at the lower limit of established appropriate management level ranges, as appropriate.

1.4 Relationship to Statutes, Regulations, or other Plans

The Federal Land Policy and Management Act of 1976 (FLPMA) requires that an action under consideration be in conformance with the applicable BLM land use plan(s), and be consistent with other federal, state, and local laws and policies to the maximum extent possible.

The Proposed Action is also consistent with the WFRHBA of 1971, which mandates the Bureau to "*prevent the range from deterioration associated with overpopulation*", and "*remove excess horses in order to preserve and maintain a thriving natural ecological balance and multiple use relationships in that area".*

Also the WFRHBA of 1971 sec 1333 (b)(1) states: "*The purpose of such inventory shall be to: make determinations as to whether and where an overpopulation exists and whether action should be taken to remove excess animals; determine appropriate management levels or wild free-roaming horses and burros on these areas of public land; and determine whether appropriate managements should be achieved by the removal or destruction of excess animals, or other options (such as sterilization, or natural control on population levels)*."

The Proposed Action is consistent with all applicable at laws and regulations at Title 43 Code of Federal Regulations (43 CFR) 4700 and policies.

43 CFR 4700.0-6 (a) Wild horses shall be managed as self-sustaining populations of healthy animals in balance with other uses and the productive capacity of their habitat (emphasis added).

43 CFR 4710.4 Management of wild horses and burros shall be undertaken with the objective of limiting the animals' distribution to herd areas. Management shall be at the minimum level necessary to attain the objectives identified in approved land use plans and herd management area plans.

43 CFR 4720.1 Upon examination of current information and a determination by the authorized officer that an excess of wild horses or burros exists, the authorized officer shall remove the excess animals immediately….

43 CFR 4720.2 Upon written request from a private landowner……the Authorized Officer shall remove stray wild horses and burros from private lands as soon as practicable.

43 CFR 4740.1 (a) Motor vehicles and aircraft may be used by the authorized officer in all phases of the administration of the Act, except that no motor vehicle or aircraft, other than helicopters, shall be used for the purpose of herding or chasing wild horses or burros for capture or destruction. All such use shall be conducted in a humane manner. (b) Before using helicopters or motor vehicles in the management of wild horses or burros, the authorized officer shall conduct a public hearing in the area where such use is to be made.

In *Animal Protection Institute*, 118 IBLA 63, 75 (1991), the Interior Board of Land Appeals (IBLA) found that under the WFRHBA of 1971 (Public Law 92-195) BLM is not required to wait until the range has sustained resource damage to reduce the size of the herd, instead proper range management dictates removal of "excess animals" before range conditions deteriorate in order to preserve and maintain a TNEB and multiple-use relationship in that area.

References to the CEQ regulations throughout this EA are to the regulations in effect prior to September 14, 2020. The revised CEQ regulations effective September 14, 2020 are not referred to in this EA because the NEPA process associated with the proposed action began prior to this date.

2.0 DESCRIPTION OF ALTERNATIVES, INCLUDING PROPOSED ACTION

2.1 Introduction:

This chapter of the EA describes the Proposed Action and Alternatives, including any that were considered but eliminated from detailed analysis. Alternatives analyzed in detail include the following:

- **Proposed Action (Alternative A).** Conduct an initial gather or gathers to remove excess animals in order to achieve low AML, adjust sex ratio in favor of males, and apply fertility control methods (vaccines and/or IUDs) to released mares. Then, over a 10-year period after the initial gather(s) have achieved low AML, conduct maintenance gathers and apply fertility control methods to maintain population at AML.
- **Alternative B.** Under Alternative B, Gather and remove excess animals to within the AML range without fertility control.
- **No Action Alternative.** Under the No Action Alternative, a gather to remove excess wild horses would not occur. There would be no active management to control population growth rates, the size of the wild horse population or to bring the wild horse population to AML.

2.2 Alternative A: Proposed Action Alternative

2.2.1 Population Management

The Proposed Action (Alternative A) would involve three distinct types of activities over the 10-year life of the plan:

1. Initially, gather and remove excess wild horses to achieve low AML either in a single first gather or over multiple follow-up gathers. Several factors could affect the ability to achieve AML with a single first gather, including: lower gather efficiencies, an expected population undercount, and limited contractor availability. If AML cannot be achieved through a single first gather, multiple follow-up gathers may be used to achieve AML.
2. Administer and/or booster population control measures to gathered and released horses, along with sex ratio adjustment, to slow population growth and maintain the wild horse population within AML.
3. Conduct additional/maintenance gathers after the initial gather(s) to bring wild horse population back to low AML if the population grows to again exceed AML during the 10-year plan life after low AML was achieved.

At the current population, if a single gather were to be implemented in 2022 to reach low AML, the BLM would gather and remove approximately 271 excess wild horses within the JMA. However, the wild horse population grows each year and if an initial gather cannot be scheduled immediately upon issuance of a decision record, or if multiple gathers are necessary to achieve low AML, the number of excess wild horses needing gather and removal to achieve low AML would be higher. All three components of the Proposed Action would allow BLM to achieve management goals and objectives of attaining a herd size

that will not exceed AML and that will allow for TNEB on the range as identified within the WFRHBA.

While the agency's plan is to promptly remove all excess animals above low AML, it is unlikely that a single gather can achieve this because of gather efficiency limitations (animals evading capture during the gather operations), logistical limitations (e.g. weather conditions, terrain and large geographic area to be gathered), population inventory undercounts, space capacity limitations (for holding removed animals), and limited contractor availability and expertise that limit the number of gathers that can be conducted annually at the national level. As a result, it often requires more than a single gather to bring the population to low AML, if only to capture animals that would have been removed if they had not evaded capture during the gather, or because a gather was ended early due to inclement weather conditions. BLM's management to achieve a thriving natural ecological balance is also not limited to removing excess animals, but also including measures to reduce annual population growth and to allow for recovery of degraded vegetation and riparian areas impacted by the wild horse over population—which requires a sufficient time frame of active management to achieve these objectives.

For these reasons, a ten-year gather plan is needed to (1) remove excess wild horses and burros and bring the population down to low end of AML as expeditiously as possible; (2) implement population control measures over a sufficient period of time to reduce population growth and measurably reduce the number of excess animals that would need to be removed from the JMA; and (3) to manage the wild horse population at AML so as to provide sufficient time for vegetation and riparian resources to recover and reestablish. Due to gather efficiency and aerial survey under estimation of existing populations and population reproduction growth it is anticipated that after the initial gather, there will be the need for at least one or more follow-up gathers in order to remove all excess animals above the low end of AML and gathers will also be necessary over the course of the ten-year period to apply population control measures that will help reduce the overall population growth rate. Since vegetative and riparian recovery occurs slowly, even after the immediate overpopulation has been addressed and low AML has been achieved, management for a thriving natural ecological balance to allow for recovery of degraded resources will require maintaining wild horses population with the AML range by removing animals in excess of AML (as a result of further population growth) during the 10-year decision period to ensure range recovery.

It is expected due to gather efficiencies, under-estimates of the actual wild horse population, annual foal crop and off-range corral space availability, that it may not be possible to attain low AML[4] during a single initial gather (i.e. not enough horses are successfully captured and removed to reach low AML). If low AML is not achieved with the first gather, the BLM Tonopah Field Office as well as the Humboldt-Toiyabe National Forest Austin-Tonopah Ranger District would return to the JMA to remove the remaining excess horses above low AML in one or more (if necessary) follow-up gathers. Follow-up gathers would also continue over the 10-year period to gather a sufficient number of wild horses to implement the population control component of the Proposed Action, which includes sex ratio adjustment (60% males/ 40% females) and fertility control treatments (PZP vaccines, GonaCon, IUDs) for wild

[4] Although AML for the JMA was set through stipulated agreement as a single number, low AML referred to here and throughout the document is the number which allows for up to three years of population growth before exceeding the set AML, as provided for in the 1997 Tonopah RMP. That RMP states "*When the appropriate management level (or in some cases interim herd size) is exceeded, remove excess wild horses and/or burros to a point which may allow up to three years of population increase before again reaching the appropriate management level or interim herd size"*. In order to adhere to BLM Handbook 4700-1 which states "AML shall be expressed as a population range within which WH&B can be managed for the long term" and the Tonopah RMP, as well as not exceed AML as set through the stipulated agreement, the AML range for the JMA is 79-132, with "low AML" at 79 wild horses.

horses remaining in the JMA. If the population again exceeds AML during the 10-year period after bringing the population back to low AML and applying fertility controls, one or more follow-up gathers could be implemented to remove additional excess wild horses above AML in order to provide degraded range resources sufficient opportunity and time to recover. Prioritization of excess wild horse removals would be as follows: from areas where public health and safety issues have been identified, private land and non-JMA, areas where resource degradation/deficiency has been identified, and within JMA areas as needed to reach and maintain AML. Selective removal procedures would prioritize removal of younger excess wild horses after achieving AML within the JMA, and allow older, less adoptable, wild horses to be released back to the JMA. BLM would begin implementing the population control components (PZP vaccines, GonaCon, IUDs) of this alternative as part of the initial gather. To help improve the efficacy and duration of fertility control vaccines, mares could be held for an additional 30 days and given a booster shot prior to release.

Population inventories and routine resource/habitat monitoring would continue to be completed every two to three years to document current population levels, growth rates, and areas of continued resource concerns (horse concentrations, riparian impacts, over-utilization, etc.). Funding limitations and competing national priorities may impact the timing and ability to gather and conduct population control components of the Proposed Action.

The management objective for the Little Fish Lake JMA is to achieve low AML as immediately as possible and to maintain AML over the 10-year plan period through population controls and removal of additional excess animals if the population again exceeds AML. BLM would achieve this through gather and removal of excess animals along with use of population growth suppression measures that include:

- Administration of fertility control measures (i.e. PZP vaccines, GonaCon or newly developed vaccine formulations, IUDs) to released mares.
- Adjustment of sex ratio to favor males

The fertility control component of the Proposed Action would reduce the population growth rate and the total number of wild horses that would otherwise be permanently removed from the range over time. Primary gather methods would include helicopter drive, bait, and water trapping. It is expected that not all horses would be able to be captured, as gather efficiencies rarely exceed 80-85%. As a result, a proportion of wild horses (15-20%+) in the project area would not be captured or treated over the 10-year period of the Proposed Action.

While in the temporary holding corral horses would be identified for removal or release based on age, gender and/or other characteristics. As a part of periodic sampling to monitor wild horse genetic diversity in the JMA, hair follicle samples would be collected from a minimum of 25 horses of the released population. Samples would be collected for analysis to assess the levels of observed heterozygosity, which is a measure of genetic diversity (BLM 2010), within the JMA and may be analyzed to determine relatedness to established breeds and other wild horse herds. Mares identified for release would be aged, microchipped and freeze-marked for identification prior to being released to help identify the animals for future treatments/boosters and assess the efficacy of fertility control treatments.

2.2.2. Population Growth Suppression Methods

The Proposed Action could include population growth suppression methods such as fertility control vaccines, IUDs, and sex ratio adjustments to 60% males. In cases where a booster vaccine is required, mares could be held for approximately 30 days and given a booster shot prior to release. Over the course of multiple gathers over the 10-year time period, BLM would treat/retreat mares with fertility control to help meet herd management objectives. The use of any new fertility control method would conform to current best management practices at the direction of the National Wild Horse and Burro Program.

All mares that are trapped and selected for release would be treated with fertility control treatments (PZP vaccines [ZonaStat-H, PZP-22], GonaCon or most current formulation, IUDs) to prevent pregnancy in the following year(s). Detailed analysis on population growth suppression methods are discussed further in Section 8.0 of the Supplemental Information (SI).

2.2.2.1. PZP

Porcine Zona Pellucida (PZP) Vaccine
Immunocontraceptive Porcine Zona Pellucida (PZP) vaccines are currently being used on over 75 areas managed for wild horses by the National Park Service, US Forest Service, and the BLM and its use is appropriate for free-ranging wild horse herds. Taking into consideration available literature on the subject, the National Research Council concluded in their 2013 report that PZP vaccine was one of the preferred available methods for contraception in wild horses and burros (NRC 2013). PZP vaccine use can reduce or eliminate the need for gathers and removals (Turner et al. 1997). PZP vaccines meet most of the criteria that the National Research Council (2013) used to identify promising fertility control methods, in terms of delivery method, availability, efficacy, and side effects. It has been used extensively in wild horses (NRC 2013), and in a population of feral burros in territory of the US (Turner et al. 1996). PZP vaccine can be relatively inexpensive, meets BLM requirements for safety to mares and the environment, and is commercially produced as ZonaStat-H, an EPA-registered product (EPA 2012, SCC 2015), or as PZP-22, which is a formulation of PZP in polymer pellets that can lead to a longer immune response (Turner et al. 2002, Rutberg et al. 2017, Carey et al. 2019). It can easily be remotely administered (dart-delivered) in the field, but typically, only where mares are relatively approachable.

Under the Proposed Action, mares being treated for the first time would receive a liquid primer dose along with time release pellets ("PZP-22"). BLM would return to the JMA as needed to re-apply PZP-22 and/or ZonaStat-H and initiate new treatments in order to maintain contraceptive effectiveness in controlling population growth rates. Application methods could be by hand in a working chute during gathers, or through field darting if mares in some portions of the JMA prove to be approachable. Both forms of PZP can safely be reapplied as necessary to control the population growth rate. Even with repeated booster treatments of PZP, it is expected that most, if not all, mares would return to fertility, and not all mares would be treated or receive boosters within the JMA due to the size of the population, the large size of the JMA, gather efficiencies and logistics of wild horse gathers. Once the population is at AML and population growth seems to be stabilized, BLM could use population planning software (PopEquus, currently in development by USGS Fort Collins Science Center) to determine the required frequency of re-treating mares with PZP or other fertility control methods.

2.2.2.2. Gonadotropin Releasing Hormone (GnRH) Vaccine, GonaCon

Registration and safety of GonaCon-Equine
The immune-contraceptive GonaCon-Equine vaccine meets most of the criteria that the National Research Council of the National Academy of Sciences (NRC 2013) used to identify the most promising fertility control methods, in terms of delivery method, availability, efficacy, and side effects. GonaCon-Equine is approved for use by authorized federal, state, tribal, public and private personnel, for application to wild and feral equids in the United States (EPA 2013, 2015). Its use is appropriate for free-ranging wild horse herds. Taking into consideration available literature on the subject, the National Research Council concluded in their 2013 report that GonaCon-B (which is produced under the trade name GonaCon-Equine for use in feral horses and burros) was one of the most preferable available methods for contraception in wild horses and burros (NRC 2013). GonaCon-Equine has been used on feral horses in Theodore Roosevelt National Park (Baker et al. 2018) and over the past 5 years, has also been applied to an increasing number of BLM-managed wild horses in over 15 HMAs throughout the west. GonaCon-Equine can be remotely administered in the field in cases where mares are relatively

approachable, using a customized pneumatic dart (McCann et al. 2017). Use of remotely delivered (dart-delivered) vaccine is generally limited to populations where individual animals can be accurately identified and repeatedly approached within 50 meters or less (BLM 2010).

As with other contraceptives applied to wild horses, the long-term goal of GonaCon-Equine use is to reduce or eliminate the need for gathers and removals (NRC 2013). GonaCon-Equine vaccine is an EPA-approved pesticide (EPA, 2009a) that is relatively inexpensive, meets BLM requirements for safety to mares and the environment, and is produced in a USDA-APHIS laboratory. Its categorization as a pesticide is consistent with regulatory framework for controlling overpopulated vertebrate animals, and in no way is meant to convey that the vaccine is lethal; the intended effect of the vaccine is as a contraceptive. GonaCon is produced as a pharmaceutical-grade vaccine, including aseptic manufacturing technique to deliver a sterile vaccine product (Miller et al. 2013). If stored at 4° C, the shelf life is 6 months (Miller et al 2013).

Miller et al. (2013) reviewed the vaccine environmental safety and toxicity. When advisories on the product label (EPA 2015) are followed, the product is safe for users and the environment (EPA 2009b). EPA waived a number of tests prior to registering the vaccine, because GonaCon was deemed to pose low risks to the environment, so long as the product label is followed (Wang-Cahill et al. in press).

Under the Proposed Action, the BLM would return to the JMA as needed to re-apply GonaCon-Equine and initiate new treatments in order to maintain contraceptive effectiveness in controlling population growth rates. Booster dose effects may lead to increased effectiveness of contraception (Baker et al. 2018), which is generally the intent. GonaCon-Equine can safely be reapplied as necessary to control the population growth rate. Even with one booster treatment of GonaCon-Equine, it is expected that most, if not all, mares would return to fertility at some point, although the average duration of effect after booster doses has not yet been quantified. It is unknown what would be the expected rate for the return to fertility rate in mares boosted more than once with GonaCon-Equine. Once the herd size in the project area is at AML and population growth seems to be stabilized, BLM would make a determination as to the required frequency of new mare treatments and mare re-treatments with GonaCon or other fertility control methods, to maintain the number of horses within AML.

2.2.2.3. Intrauterine Devices (IUDs)

IUDs are considered a temporary fertility control method that does not generally cause future sterility (Daels and Hughes 1995). It is expected that IUDs would only be inserted in non-pregnant (open) mares. Wild mares receiving IUDs would be checked for pregnancy prior to insertion of an IUD. BLM has used IUDs to control wild horse fertility in management applications in Utah and Wyoming. The BLM has supported and continues to support research into the development and testing of effective and safe IUDs for use in wild horse mares (Baldrighi et al. 2017, Holyoak et al. 2021). However, existing literature on the use of IUDs in horses allows for inferences about expected effects of any management alternatives that might include use of IUDs, and supports the apparent safety and efficacy of some types of IUDs for use in horses (Section 8.0 SI).

Soft IUDs may cause relatively less discomfort than hard IUDs (Daels and Hughes 1995). The 2013 National Academies of Sciences (NAS) report considered IUDs and suggested that research should test whether IUDs cause uterine inflammation, and should also test how well IUDs stay in mares that live and breed with fertile stallions. Since that report, researchers tested a Y-shaped IUD to determine retention rates and assess effects on uterine health; retention rates were greater than 75% for an 18-month period, and mares returned to good uterine health and reproductive capacity after removal of the IUDs (Holyoak et al., 2021). Also, the University of Massachusetts has developed a magnetic IUD that has been effective at preventing estrus in non-breeding domestic mares (Gradil et al. 2019). The overall results are consistent with results from an earlier study (Daels and Hughes 1995), which used O-shaped silicone IUDs.

2.3 Alternative B

Under this alternative, BLM would gather and remove excess animals to within AML range without fertility control treatments. Impacts from this alternative would be similar to the gathering and handling impacts under the Proposed Action. Gathers conducted under Alternative B could be completed as gate-cut gathers where only enough horses are gathered and removed to achieve the AML goal, or as selective removal where removal criteria such as age and conformation could be utilized to choose which horses are to be released in order to improve wild horse health and characteristics and remove only adoptable horses while releasing the older horses back to the range.

2.4 Management Actions Common to Alternatives A and B

Both Alternatives A and B would authorize the BLM to gather horses and remove excess wild horses to achieve low AML, and to maintain the AML through maintenance gathers for the next 10 years following the start date of the initial gather. All gather and handling activities would be conducted in accordance with the standards set in the Comprehensive Animal Welfare Program (CAWP) and the SOPs found in Section 5.0 of the SI document. CAWP guidelines can be found on the BLM website at https://www.blm.gov/programs/wild-horse-and-burro/comprehensive-animal-welfare-program.

The primary gather techniques would be the helicopter-drive and water/bait trapping. The use of roping from horseback could also be used when necessary. Multiple, temporary gather sites (traps) would be used to gather wild horses both from within and outside the JMA. In addition to public lands, private property may be utilized for gather sites and temporary holding facilities (with the landowner's permission) if necessary, to ensure accessibility and/or based on prior disturbance. Use of private land would be subject to Standard Operating Procedures (SOPs) (Section 5.0 SI) and to the written approval/authorization of the landowner.

Any trapping activities would be scheduled in locations and during time periods that would be most effective to gather sufficient numbers of animals to achieve management goals for the areas being gathered. The most efficient gather technique would be chosen as determined by the gather needs of the specific area.

Temporary gather and holding sites would be no larger than 0.5 acres. Bait or water trapping sites could remain in place up to one year. Temporary holding sites could be in place for up to 45 days depending on length of gather. The exact location of the gather sites and holding sites may not be determined until immediately prior to the gather because the location of the animals on the landscape is variable and unpredictable.

The BLM would make every effort to place gather sites in previously disturbed areas, but if a new site needs to be used, a cultural inventory would be completed prior to using the new gather site. If cultural resources are encountered, the location of the gather/ holding site would be adjusted to avoid all cultural resources.

No gather sites would be set up on Greater sage-grouse leks, known populations of sensitive species, in riparian areas, in cultural resource sites, sacred sites, paleontological sites, Wilderness Study Areas (WSAs) or congressionally designated Wilderness Areas. All gather sites, holding facilities, and camping areas on public lands would be recorded with Global Positioning System equipment, given to the BLM Battle Mountain Non-native Weed Coordinator, and then assigned for monitoring and any necessary treatment during the next several years for invasive, non-native weeds. All gather and handling activities (including gather site selections) would be conducted in accordance with SOPs in Section 5.0 of SI.

Activities in listed species habitat would be subject to Section 7 consultation under the Endangered

Species Act with the level of consultation to be determined based upon the project site-specific proposed action. BLM would complete consultation prior to implementation of any specific action which may have an effect on a listed species.

Wildlife Stipulations (Common to Alternatives A and B)

- If gather operations were to be conducted during the migratory bird breeding season (March 1 – July 31) a nest clearance survey would be conducted by BLM Biologist at trap, corral, and staging areas.
- Trap sites and corrals would not be located in active pygmy rabbit habitat or other sensitive habitat.
- Corrals would not be constructed within 1 mile of an active or pending lek.
- Prior to gathers, BLM would coordinate with the Nevada Department of Wildlife (NDOW) regarding locations of staging areas to address Greater sage-grouse concerns. The following timing restrictions would be adhered to the best of BLM's abilities while not impeding gather operations:
    - Helicopter and water trapping gather would not occur during the lek timing restriction of March 1 – May 15 to protect breeding Greater sage-grouse.
    - Helicopter gathers would not occur during the nesting timing restriction of April 1 – June 30 within 4 miles of an active or pending lek.
    - Water trapping operations would not occur during nesting timing restriction April 1 – June 30 within 1 mile of an active or pending lek.
    - Water trapping operations would not occur at springs and seeps during brood-rearing timing restriction of May 1 – September 15 if determined by the BLM wildlife biologist the locations are considered Greater sage-grouse brood habitat.

2.4.1. Helicopter Drive Trapping

The BLM would utilize a contractor to perform the gather activities in cooperation with the BLM. The contractor would be required to conduct all helicopter operations in a safe manner and in compliance with Federal Aviation Administration (FAA) regulations 14 CFR § 91.119, WO.

Per BLM IM 2013-059 and BLM IM 2010-164, helicopter landings would not be allowed in wilderness except in the case of an emergency.

Helicopter-drive trapping may be needed to meet management objectives to capture the highest percentage of wild horses possible. The appropriate gather method would be decided by the Wild Horse and Burro Specialist based on the location, accessibility of the animals, local terrain, vegetative cover, and available sources of water and forage. The use of roping from horseback could also be used when necessary. Based on wild horse watering locations in this area, it is estimated that multiple trap sites may be used during trapping activities.

Helicopter drive trapping involves use of a helicopter to herd wild horses into a temporary trap. The SOPs outlined in Section 5.0 of the SI, as well as standards set by the Comprehensive Animal Welfare Program (CAWP), would be implemented to ensure that the gather is conducted in a safe and humane manner, and to minimize potential impacts or injury to the wild horses. Utilizing the topography, traps would be set in areas with high probability of horse access. This would assist with capturing excess wild horses residing nearby. Traps consist of a large catch pen with several connected holding corrals, jute-covered wings and a loading chute. The jute covered wings are made of fibrous material, not wire, to avoid injury to the horses. The wings form an alley way used to guide the horses into the trap. Trap locations are changed during the gather to reduce the distance that the animals must travel. A helicopter is used to locate and herd wild horses to the trap location. The pilot uses a pressure and release system while guiding them to

the trap site, allowing them to travel at their own pace. As the herd approaches the trap the pilot applies pressure and a prada horse is released guiding the wild horses into the trap. Once horses are gathered, they are removed from the trap and transported to a temporary holding facility where they are sorted.

During helicopter drive-trapping operations, BLM would assure that an Animal and Plant Health Inspection Service (APHIS) veterinarian or contracted licensed veterinarian is on-site or on call to examine animals and make recommendations to BLM for care and treatment of wild horses. BLM staff would be present on the gather at all times to observe animal condition, ensure humane treatment of wild horses, and ensure contract requirements are met.

2.4.2. Bait/Water Trapping

Bait and/or water trapping would be used as appropriate to gather wild horses efficiently and effectively. Bait and water trapping may be utilized, when wild horses are in an area where there are limited resource (such as food or water). The use of bait and water trapping, though effective in specific areas and circumstances, would not be timely, cost-effective or practical as the primary or sole gather method for the JMA. However, water or bait trapping could be used as a supplementary approach to achieve the desired goals of Alternatives A-B throughout portions of the JMA. Bait and/or water trapping generally require a longer window of time for success than helicopter drive trapping. Although the trap would be set in a high probability area for capturing excess wild horses residing within the area and at the most effective time periods, time is required for the horses to acclimate to the trap and/or decide to access the water/bait.

Trapping involves setting up portable panels around an existing water source or in an active wild horse area, or around a pre-set water or bait source. The portable panels would be set up to allow wild horses to go freely in and out of the corral until they have adjusted to it. When the wild horses fully adapt to the corral, it is fitted with a gate system. The adaptation of the horses creates a low stress trapping method. During this acclimation period the horses would experience some stress due to the panels being setup and perceived access restriction to the water/bait source. See SI section 5.0.

Gathering excess horses using bait/water trapping could occur at any time of the year and traps would remain in place until the target numbers of animals are removed. As the proposed bait and/or water trapping in this area is a lower stress approach to gathering wild horses, such trapping can continue into the foaling season without harming the mares or foals.

2.4.3. Gather-related Temporary Holding Facilities (Corrals)

Wild horses that are gathered would be transported from the gather sites to a temporary holding corral. At the temporary holding corral wild horses would be sorted into different pens. Mares would be identified for fertility control and treated at the corrals. The horses would be provided good quality hay and water. At the temporary holding facility, a veterinarian, when present, would provide recommendations to the BLM regarding care and treatment of recently captured wild horses. Any animals affected by a chronic or incurable disease, injury, lameness or serious physical defect (such as severe tooth loss or wear, club foot, and other severe congenital abnormalities) would be humanely euthanized using methods acceptable to the American Veterinary Medical Association (AVMA).

Herd health and characteristics data would be collected as part of continued monitoring of the wild horse herds. Genetic baseline data would be collected to monitor the genetic health of the wild horses within the combined project area. Additional samples may be collected to analyze ancestry.

Gathered wild horses would be transported to BLM off-range corrals where they would be prepared for adoption and/or sale to qualified individuals or transfer to off-range pastures or other disposition authorized by the WFRHBA.

2.4.4. Transport, Off-range Corrals, and Adoption Preparation

All gathered wild horses would be removed and transported to BLM off range corrals (ORCs, formerly short-term holding facilities) where they would be inspected by facility staff (and if needed by a contract veterinarian) to observe health conditions and ensure that the animals are being humanely cared for. Wild horses removed from the range would be transported to the receiving ORC in a goose-neck stock trailer or straight-deck semi-tractor trailers. Trucks and trailers used to haul the wild horses would be inspected prior to use to ensure wild horses can be safely transported. Wild horses would be segregated by age and sex when possible and loaded into separate compartments. Mares and their un-weaned foals may be shipped together. Transportation of recently captured wild horses is limited to a maximum of 10 hours.

Upon arrival, recently captured wild horses are off-loaded by compartment and placed in holding pens where they are provided good quality hay and water. Most wild horses begin to eat and drink immediately and adjust rapidly to their new situation. At the ORC, a veterinarian provides recommendations to the BLM regarding care, treatment, and if necessary, euthanasia of the recently captured wild horses. Any animals affected by a chronic or incurable disease, injury, lameness or serious physical defect (such as severe tooth loss or wear, club foot, and other severe congenital abnormalities) would be humanely euthanized using methods acceptable to the AVMA. Wild horses in very thin condition, or animals with injuries, are sorted and placed in hospital pens, fed separately, and/or treated for their injuries.

After recently captured wild horses have transitioned to their new environment, they are prepared for adoption, sale, or transport to off-range pastures. Preparation involves freeze marking the animals with a unique identification number, vaccination against common diseases, castration, microchipping, and de-worming. At ORC facilities, a minimum of 700 square feet of space is provided per animal.

2.4.5. Adoption

Adoption applicants are required to have at least a 400 square foot corral with panels that are at least six feet tall. Applicants are required to provide adequate shelter, feed, and water. The BLM retains title to the horse for one year and inspects the horse and facilities during this period. After one year, the applicant may take title to the horse, at which point the horse becomes the property of the applicant. Adoptions are conducted in accordance with 43 CFR Subpart 4750.

2.4.6. Sale with Limitations

Buyers must fill out an application and be pre-approved before they may buy a wild horse. A sale-eligible wild horse is any animal that is more than 10 years old or has been offered unsuccessfully for adoption at least three times. The application also specifies that buyers cannot sell the horse to anyone who would sell the animals to a commercial processing plant. Sales of wild horses are conducted in accordance with the 1971 WFRHBA and congressional limitations.

2.4.7. Off-Range Pastures

When shipping wild horses for adoption, sale or Off-Range Pastures (ORPs), the animals may be transported for up to a maximum of 24 hours. Immediately prior to transportation, and after every 24 hours of transportation, animals are off-loaded and provided a minimum of 8 hours on the-ground rest. During the rest period, each animal is provided access to unlimited amounts of clean water and two pounds of good quality hay per 100 pounds of body weight with adequate space to allow all animals to eat at one time. Mares and sterilized stallions (geldings) are segregated into separate pastures. Although the animals are placed in ORP, they remain available for adoption or sale to qualified individuals; and foals born to pregnant mares in ORP are gathered and weaned when they reach about 8-12 months of age and are also made available for adoption. The ORP contracts specify the care that wild horses must receive to ensure they remain healthy and well-cared for. Handling by humans is minimized to the extent possible although regular on-the-ground observation by the ORP contractor and periodic counts of the wild horses

to ascertain their well-being and safety are conducted by BLM personnel and/or veterinarians.

2.4.8. Euthanasia or Sale without Limitations

Under the WFRHBA, healthy excess wild horses can be euthanized or sold without limitation if there is no adoption demand for the animals. However, while euthanasia and sale without limitation are allowed under the statute, for several decades Congress has prohibited the use of appropriated funds for this purpose. If Congress were to lift the current appropriations restrictions, then it is possible that excess horses removed from the JMA over the next 10 years could potentially be euthanized or sold without limitation consistent with the provisions of the WFRHBA.

Any old, sick or lame horses unable to maintain an acceptable body condition (greater than or equal to a Henneke BCS of 3) or with serious physical defects would be humanely euthanized either before gather activities begin or during the gather operations as well as at off-range corrals. Decisions to humanely euthanize animals in field situations would be made in conformance with BLM policy (BLM Permanent Instruction Memorandum (PIM) 2021-007 or most current edition). Conditions requiring humane euthanasia occur infrequently and are described in more detail in PIM 2021-007.

2.4.9. Public Viewing Opportunities

Opportunities for public observation of the gather activities on public lands would be provided, when and where feasible, and would be consistent with BLM IM No. 2013-058 and the Visitation Protocol and Ground Rules for Helicopter WH&B Gathers within Nevada (Section 6.0 of the SI). This protocol is intended to establish observation locations that reduce safety risks to the public during helicopter gathers (e.g., from helicopter-related debris or from the rare helicopter crash landing, or from the potential path of gathered wild horses), to the wild horses (e.g., by ensuring observers would not be in the line of vision of wild horses being moved to the gather site), and to contractors and BLM employees who must remain focused on the gather operations and the health and well-being of the wild horses. Observation locations would be located at gather or holding sites and would be subject to the same cultural resource requirements as those sites.

During water/bait trapping operations, spectators and viewers would be prohibited as it would impact the contractor's ability to capture wild horses. Only essential gather operation personnel would be allowed at the trap site during operations.

2.5 No Action Alternative

Although the No Action Alternative does not comply with the WFRHBA of 1971 and does not meet the purpose and need for the action in this EA, it is included as a basis for comparison with the Proposed Action.

Under the No Action Alternative, a gather to remove excess wild horses would not occur. There would be no active management to control the size of the wild horse population or to bring the wild horse population to AML. The current wild horse population would continue to increase at a rate of 12.2%-23.6% per year (Table 4 of SI). Within two years, the wild horse population could exceed 330 animals, or nearly three times AML. Wild horses in the JMA often venture onto private property, destroying fences and impacting water sources on private property. Increasing numbers of excess wild horses will continue to deteriorate rangelands within the JMA, public safety concerns will increase along heavily traveled roads, and damage to private property would continue. There would also be an increase in emergency actions necessary to address the overpopulations of wild horses and limited water/forage resources in the JMA.

2.6 Alternatives Considered but Eliminated from further Consideration

The following alternatives to the helicopter drive and bait/water trapping method for the removal of wild

horses to reach the established AML were considered but eliminated from detailed analysis for the reasons stated below.

2.6.1. Field Darting Horses with ZonaStat-H (Native PZP) or GonaCon-Equine
This alternative was eliminated from further consideration as the sole method of population reduction and control due to the difficulties inherent in darting wild horses in the project area. Field darting of wild horses typically works in small areas with good access where animals are acclimated to the presence of people who come to watch and photograph them. The presence of water sources on both private and public lands inside and outside the JMA would make it almost impossible to restrict wild horse access to be able to dart horses consistently. Horse behavior limits their approachability/accessibility, so that the number of mares expected to be treatable via darting would be insufficient to control growth. BLM would have difficulties keeping records of animals that have been treated due to common and similar colors and patterns. This formulation of PZP also requires a booster given every year following treatment to maintain the highest level of efficacy. Annual darting of wild horses in large areas can be very difficult to replicate and would be unreliable. For these reasons, this alternative was determined to not be an effective or feasible method for applying population controls to wild horses from the JMA. Darting is included as a potential tool for use under the Proposed Action in areas that may be deemed suitable in the future, and to be implemented in concert with the other methods detailed in the Proposed Action.

2.6.2. Control of Wild Horse Numbers by Fertility Control Treatment Only (No Removals)
An alternative to gather a significant portion of the existing population (95%) and implement fertility control treatments only, without removal of excess wild horses was modeled using a three-year gather/treatment interval over an 11-year period, in the WinEquus software. Based on this modeling, this alternative would not result in attainment of the AML range for the JMA and the wild horse population would continue to have an average population growth rate of 8.7% to 16.3%, adding to the current wild horse overpopulation, albeit at a slower rate of growth. Over the next 11 years an average of 681 wild horse captures would need to take place, to allow for injection of vaccines for population control. Of those, 211 mare captures would lead to treatment with PZP vaccine or other accepted fertility control vaccines. It is important to understand that in this scenario, each time a wild horse is gathered it is counted, even though the same wild horse may be gathered multiple times during the 11-year period. And each time a wild horse is treated with PZP-22, it is counted even though the same wild horse may be treated multiple times over the 11-year period. See Section 3.0 of the SI for population modeling.

This alternative would not bring the wild horse population to within the established AML range, would allow the wild horse population to continue to grow even further in excess of AML, and would allow resource concerns to further escalate. Implementation of this alternative would result in increased gather and fertility control costs without achieving a thriving natural ecological balance or resource management objectives. This alternative would not meet the purpose and need and therefore was eliminated from further consideration.

2.6.3. Chemical Immobilization
Chemical immobilization as a method of capturing wild horses is not a viable alternative because it is a very specialized technique and is strictly regulated. Currently the BLM does not have sufficient expertise or policy to implement this method and it would be impractical to use given the size of the JMA, access limitations and approachability of the horses.

2.6.4. Use of Wrangler on Horseback Drive-trapping
Use of wranglers on horseback drive-trapping to remove excess wild horses can be somewhat effective on a small scale but due to the number of horses to be gathered, the large geographic size of the JMA, and lack of approachability of the animals, this technique would be ineffective and impractical as a substitute for helicopter trapping. Wild horses often outrun and outlast domestic horses carrying riders. Helicopter

assisted roping is typically only used if necessary and when the wild horses are in close proximity to the gather site. For these reasons, this method was eliminated from further consideration.

2.6.5. Designate the JMA to be Managed Principally for Wild Horse Herds Under 43 C.F.R. 4710.3-2.

The areas that make up the JMA are designated in the Land Use Planning process for the long-term management of wild horses. The (BLM) Tonopah Field Office and Humboldt-Toiyabe National Forest do not administer any designated Wild Horse or Burro Ranges, which under 43 C.F.R. 4710.3-2 are "to be managed principally, but not necessarily exclusively, for wild horse or burro herds." There are currently only four designated Wild Horse or Burro Ranges. This alternative would involve no removal of wild horses and would instead address excess wild horse numbers through removal or reduction of livestock within the JMA. In essence, this alternative would exchange use by livestock for use by wild horses. Because this alternative would mean converting the JMAs to a wild horse range and modifying the existing multiple use relationships established through the land-use planning process, it would first require an amendment to the RMP, which is outside the scope of this EA. This alternative was not brought forward for analysis because it is inconsistent with the 1997 Tonopah RMP and the WFRHBA which directs the Secretary to immediately remove excess wild horses where necessary to ensure a TNEB and multiple use relationship. This alternative is also inconsistent with the BLM's multiple use management mission under FLPMA. Changes to or the elimination of livestock grazing cannot be made through a wild horse gather decision. Furthermore, even with significantly reduced levels of livestock grazing within the gather area relative to the permitted levels authorized in the 1997 Tonopah RMP, there is insufficient habitat for the current population of wild horses, as confirmed by monitoring data. As a result, this alternative was not analyzed in detail.

2.6.6. Raising the Appropriate Management Levels for Wild Horses

Delay of a gather until the AMLs can be reevaluated is not consistent with the WFRHBA, Public Rangelands Improvement Act (PRIA) or FLPMA or the existing Tonopah RMP. Monitoring and other historical data collected within the JMA does not indicate that an increase in AML is warranted at this time. On the contrary, such monitoring data confirms the need to remove excess wild horses above AML to reverse downward trends, promote improvement of rangeland health and ensure safety and health of wild horses.

Severe range degradation would occur if an AML reevaluation process were initiated without gathering the excess animals and an even larger number of excess wild horses would ultimately need to be removed from the range in order to achieve the AMLs or to prevent the death of individual animals under emergency conditions. This alternative was eliminated from further consideration because it is contrary to the WFRHBA which requires the BLM to manage the rangelands to prevent the range from deterioration associated with an overpopulation of wild horses. Raising the AML where there are known resource degradation issues associated with an overpopulation of wild horses does not meet the Purpose and Need to Restore a TNEB or meet Rangeland Health Standards.

2.6.7. Remove or Reduce Livestock Within the JMA

This alternative would involve no removal of wild horses and would instead address excess wild horse numbers through removal or reduction of livestock within the JMA. In essence, this alternative would simply exchange use by livestock for use by wild horses. This alternative was not brought forward for analysis because it is inconsistent with the Tonopah RMP, and the WFRHBA which directs the Secretary to immediately remove excess wild horses.

The proposal to reduce livestock would not meet the Purpose and Need for action identified in Section 1.2: "to gather and remove excess wild horses from within and outside the Little Fish Lake JMA and to reduce the wild horse population growth rates to achieve and maintain established AML", and to "prevent

undue or unnecessary degradation of the public lands, and protect rangeland resources from deterioration associated with excess wild horses within the JMAs, and to restore a TNEB and multiple use relationship on the public lands consistent with the provisions of Section 1333 (a) of the 1971 WFRHBA."

Eliminating or reducing grazing in order to shift forage use to wild horses would not be in conformance with the existing Land Use Plans and is contrary to the BLM's multiple-use mission as outlined in FLPMA and would be inconsistent with the WFRHBA and PRIA. It was Congress' intent to manage wild horses and burros as one of the many uses of the public lands, not a single use. Therefore, the BLM is required to manage wild horses and burros in a manner designed to achieve a TNEB between wild horse and burro populations, wildlife, domestic livestock, vegetation and other uses.

Information about the Congress' intent is found in the Senate Conference Report (92-242) which accompanies the 1971 WFRHBA (Senate Bill 1116): "*The principal goal of this legislation is to provide for the protection of the animals from man and not the single use management of areas for the benefit of wild free-roaming horses and burros. It is the intent of the committee that the wild free-roaming horses and burros be specifically incorporated as a component of the multiple-use plans governing the use of the public lands.*"

Furthermore, simply re-allocating livestock Animal Unit Months (AUMs) to increase the wild horse AMLs would not achieve a TNEB. Wild horses are unlike livestock which can be confined to specific pastures, limited to specific periods of use, and specific seasons-of-use so as to minimize impacts to vegetation during the critical growing season and to riparian zones during the summer months. Wild horses are present year-round and their impacts to rangeland resources cannot be controlled through establishment of a grazing system, such as for livestock. Thus, impacts from wild horses can only be addressed by limiting their numbers to a level that does not adversely impact rangeland resources and other multiple uses.

Livestock grazing can only be reduced or eliminated through provisions identified within regulations at 43 CFR § 4100 and must be consistent with multiple use allocations set forth in Land Use Plans (LUPs)/RMPs. Such changes to livestock grazing cannot be made through a wild horse gather decision and are only possible if BLM first revises the LUPs to allocate livestock forage to wild horses and to eliminate or reduce livestock grazing. Because this alternative is inconsistent with the Tonopah RMP, it would first require an amendment to the RMP, which is outside the scope of this EA.

2.6.8. Wild Horse Numbers Controlled by Natural Means

This alternative was eliminated from further consideration because it is contrary to the WFRHBA which requires the BLM to prevent range deterioration associated with an overpopulation of wild horses. The alternative of using natural controls to achieve a desirable AML has not been shown to be feasible in the past (NRC 2013).

Survival rates for wild horses on western USA public lands are high (Ransom et al. 2016). None of the significant natural predators from native ranges of the wild equids in Europe, Asia, and Africa — wolves, brown bears, and African lions — exist on the wild horse ranges in the western United States (mountain lions are known to predate on horses, primarily foals, in a few herds (Andreasen et al. 2021), but predation contributes to biologically meaningful population limitation in only a handful of herds). In some cases, adult annual survival rates exceed 95% (ransom et al. 2016).

Many horse herds grow at sustained high rates of 15-25% per year and are not a self-regulating species (NRC 2013, Ransom et al. 2016). The National Academies of Sciences report (NRC 2013) concluded that the primary way that equid populations self-limit is through increased competition for forage at higher

densities, which results in smaller quantities of forage available per animal, poorer body condition and decreased natality and survival. It also concluded that the effect of this would be impacts to resource and herd health that are contrary to BLM management objectives and statutory and regulatory mandates. This alternative would result in a steady increase in the wild horse populations which would continue to exceed the carrying capacity of the range resulting in a catastrophic mortality of wild horses in the JMA, and irreparable damage to rangeland resources.

While some members of the public have advocated "letting nature take its course", allowing horses to die of dehydration and starvation would be inhumane treatment and would be contrary to the WFRHBA, which mandates removal of excess wild horses. The damage to rangeland resources that results from excess numbers of wild horses is also contrary to the WFRHBA, which mandates the Bureau to "*protect the range from the deterioration associated with overpopulation*", "*remove excess animals from the range so as to achieve appropriate management levels*", and "*to preserve and maintain a thriving natural ecological balance and multiple-use relationship in that area*".

Title 43 CFR § 4700.0-6 (a) states "*Wild horses shall be managed as self- sustaining populations of healthy animals in balance with other uses and the productive capacity of their habitat*". As the vegetative and water resources are over utilized and degraded to the point of no recovery as a result of the wild horse overpopulation, wild horses would start showing signs of malnutrition and starvation. The weaker animals, generally the older animals, and the mares and foals, would be the first to be impacted. It is likely that a majority of these animals would die from starvation and dehydration which could lead to a catastrophic die off. The resultant population could be heavily skewed towards the stronger stallions which could contribute to social disruption in the JMA. Competition between wildlife and wild horses for forage and water resources would be severe. Wild horses can be aggressive around water sources, and some wildlife may not be able to compete, which could lead to the death of individual animals. Wildlife habitat conditions would deteriorate as wild horse numbers above AML reduce herbaceous vegetative cover, damage springs and increase erosion, and could result in irreversible damage to the range. This degree of resource impact would likely lead to management of wild horses at a greatly reduced level if BLM is able to manage for wild horses at all on the JMA in the future. For these reasons, this alternative was eliminated from further consideration. This alternative would not meet the Purpose and Need for this EA which it is to remove excess wild horses from within and outside the JMA and to reduce the wild horse population growth rates to manage wild horses within established AML ranges for a TNEB.

2.6.9. Gathering the JMA to AML

Under this Alternative, a gather would be conducted to gather and remove enough wild horses to achieve the AML (132 in the JMA) rather than to low AML for this HMA. A post-gather population size at AML would result in AML being exceeded following the next foaling season. This would be unacceptable for several reasons.

The AML represents "*that 'optimum number' of wild horses which results in a thriving natural ecological balance and avoids a deterioration of the range*" Animal Protection Institute, 109 IBLA 119 (1989). The IBLA has also held that, "*Proper range management dictates removal of horses before the herd size causes damage to the rangeland. Thus, the optimum number of horses is somewhere below the number that would cause resource damage*" *Animal Protection Institute*, 118 IBLA 63, 75 (1991).

The AML established for the Little Fish Lake JMA represents the maximum population for which TNEB would be maintained. Additionally, the Tonopah RMP objectives for wild horses and burros state: "*When the appropriate management level (or in some cases interim herd size) is exceeded, remove excess wild horses and/or burros to a point which may allow up to three years of population increase before again reaching the appropriate management level or interim herd size".* Gathering to AML (rather than low AML) would be counter to the Tonopah RMP and would not meet the objectives of the RMP.

Additionally, gathering only to AML, would result in the need to follow up with another gather by the next year and could result in continued overutilization of vegetation resources and damage to important wildlife habitats. Frequent gathers could increase the stress to wild horses, as individuals and as entire herds.

This alternative would not meet the Purpose and Need for this EA which it is to remove excess wild horses from within and outside the Little Fish Lake JMA, to reduce the wild horse population growth rates to manage wild horses within established AML ranges, and to minimize the frequency of gathers needed to remove excess wild horses.

The need for the action is to prevent undue or unnecessary degradation of the public lands associated with excess wild horses, to restore a TNEB and multiple use relationship on public lands, consistent with the provisions of Section 1333(b) of the 1971 WFRHBA. For these reasons, this alternative was eliminated from further consideration.

2.6.10. Gathering the JMA after the Completion of a Rangeland Health Assessment
Under this Alternative the JMA would not be gathered until after a Rangeland Health Assessment is completed. Currently excess wild horses in the JMA are causing deterioration to rangeland resources and waiting to complete a Rangeland Health Assessment would only further the degradation of rangelands.

Furthermore, the Alternative wound not meet the Purpose and Need for action identified in Section 1.2: "to achieve and maintain the AML through removal of excess wild horses from within and outside of the HMA boundaries, and to reduce the population growth rate to prevent undue or unnecessary degradation of the public lands, and protect rangeland resources from deterioration associated with excess wild horses within the HMAs, and to restore a TNEB and multiple use relationship on the public lands consistent with the provisions of Section 1333 (a) of the 1971 WFRHBA."

The need for the action is to prevent undue or unnecessary degradation of the public lands associated with excess wild horses, to restore a TNEB and multiple use relationship on public lands, consistent with the provisions of Section 1333(b) of the 1971 WFRHBA. For these reasons, this alternative was eliminated from further consideration.

3.0 AFFECTED ENVIRONMENT/ENVIRONMENTAL EFFECTS

3.1. Identification of Issues:
Internal scoping was conducted by an interdisciplinary (ID) team to analyze the potential consequences of the Proposed Action. Potential impacts to the following resources/concerns were evaluated in accordance with criteria listed in the NEPA Handbook H-1790-1 (2008) page 41, to determine if detailed analysis was required. Consideration of some of these items is to ensure compliance with laws, statutes or Executive Orders that impose certain requirements upon all Federal actions. Other items are relevant to the management of public lands in general, and to the Battle Mountain District BLM in particular.

Table 2. summarizes which of the supplemental authorities of the human environment and other resources of concern within the project area are present, not present or not affected by the Proposed Action.

Table 2. Summary of Supplemental Authorities and Other Elements of the Human Environment

Resource/Concern	Issue(s) Present? (Y/N)	Affected? (Y/N)	Rationale for Dismissal from Detailed Analysis or Issue(s) Requiring Detailed Analysis
Air Quality	N	N	The air quality status for the project analysis area in Nye County

Resource/Concern	Issue(s) Present? (Y/N)	Affected? (Y/N)	Rationale for Dismissal from Detailed Analysis or Issue(s) Requiring Detailed Analysis
			is termed "unclassifiable" by the State of Nevada. No data is collected in areas outside of Pahrump in southeastern Nye County due to the expectation that annual particulate matter would not exceed national standards. The proposed action or alternatives would not affect air quality in Nye County.
Areas of Critical Environmental Concern (ACEC)	N	N	Not present in the designated JMA boundaries.
Cultural Resources	Y	N	In accordance with the SOPs for Gather and Handling Activities in BLM Nevada and Nevada State Historic Preservation Office Protocol agreement, gather facilities would be placed in previously disturbed areas. Should new, previously undisturbed gather sites or holding facility locations be required, appropriate Class III cultural resource inventories would be conducted to avoid placing gather facilities in areas with cultural resources and to ensure that measures are taken to avoid any cultural resource impacts.
Forest and Rangelands	N	N	Project has a negligible impact directly, indirectly and cumulatively to forest health. Detailed analysis not required.
Fish Habitat	Y	Y	Effects to resource are analyzed in this EA.
Migratory Birds	Y	Y	Effects to resource are analyzed in this EA.
Native American Religious and other Concerns	N	N	No affected traditional religious or cultural sites of importance have been identified in the project area.
Species Threatened, Endangered or Proposed for listing under the Endangered Species Act.	N	N	No known T&E or their habitats exist in the JMA.
Wastes, Hazardous or Solid	N	N	No hazardous or solid wastes exist in the designated HMA boundaries, nor would any be introduced.
Water Quality, Drinking/Ground	N	N	The proposed action or alternatives would not affect drinking or groundwater quality. The project design would avoid surface water and riparian systems and no water wells would be affected.
Wild and Scenic Rivers	N	N	Not Present.
Wilderness/WSA	Y	Y	Effects to resource are analyzed in this EA.
Environmental Justice and Socioeconomics	N	N	The Proposed Action would not have disproportionately high or adverse effects on low income or minority populations. Health and environmental statues would not be compromised. The Proposed Action would not disproportionately impact social or economic values.
Floodplains	N	N	The project analysis area was not included on FEMA flood maps.
Farmlands, Prime and Unique	N	N	Resource not present.
Wetlands/Riparian Zones	Y	Y	Effects to resource are analyzed in this EA.

Resource/Concern	Issue(s) Present? (Y/N)	Affected? (Y/N)	Rationale for Dismissal from Detailed Analysis or Issue(s) Requiring Detailed Analysis
Non-native Invasive and Noxious Species	Y	Y	Impacts under each alternative could result in increasing weed populations. Analysis in Section 3.9.
Land Use Authorizations	Y	N	The proposed actions and alternatives would not affect land use authorizations.
Lands with Wilderness Characteristics	Y	N	BLM LWC inventory units are contiguous with USFS Wilderness. The LWC units that have wilderness characteristics per BLM managed lands within the horse gather include NV-060-329 and NV-060-231A. Per the Tonopah RMP, LWC's are managed for multiple use. Impacts to Wilderness Character are the same as those analyzed under Wilderness and WSA.
Human Health and Safety	N	N	Risks have been assessed to mitigate any safety hazards in the form of safety plans and risk management worksheets.
Special Status Plant and Animal Species	Y	Y	Effects to resource are analyzed in this EA.
Wildlife	Y	Y	Effects to resource are analyzed in this EA.
Paleontology	N	N	There is a minimal likelihood that resources would be present. Any surface disturbance resulting from the proposed gather would not be sufficient to cause impacts.
Wild Horses	Y	Y	Effects to resource are analyzed in this EA.
Grazing/Livestock Management	Y	Y	Effects to resource are analyzed in this EA
Soils Resources	Y	Y	Effects to resource are analyzed in this EA.
Water Resources (Water Rights)	N	N	The proposed action and alternatives would not affect water resources or water rights. Project design would avoid surface water and riparian systems. Permitted or pending water uses would not be affected.
Mineral Resources	N	N	There would be no modifications to mineral resources through the Proposed Action.
Vegetation Resources	Y	Y	Impacts under each alternative could result in improving or deteriorating native plant communities. Effects to vegetation resources are analyzed in this EA.
Recreation	Y	N	Recreation is considered present; however, the horse gathering activities would not majorly affect recreation resources in the area. Potential recreational opportunities within the horse gather rea include dispersed camping, hunting, hiking, wildlife watching, etc. The major affected recreational activity that would be most affected would be the hunting with NDOW units (162 and 163). Per NDOW hunting regulations, hunters should check with their local BLM office to inquire about horse gathering activities within their hunt unit/area.
Visual Resource Management	Y	N	Impacts to visual resources would be present; however, the horse gathering activities would not majorly affect visual resource management resources in the area. The gathering activities would not put in place permanent structures and would only occur for short time periods. Impacts would be negligible.

3.2. General Setting

The Little Fish Lake JMA is characterized by hills and mountain slopes transitioning to piedmont fans and eroded fan remnants formed in mixed alluvium derived from both sedimentary and igneous parent

material, including loess of volcanic origin. Lower elevations are comprised of inset fans, fan skirts, and stream terraces. The valley bottom has a salty, clayey soil, with a shallow water table. The benches and alluvial fans are gravelly and stony, while the large washes are composed of deep sandy soils relatively free of stone. The internal drainage of the valley is toward the axial drainageway and then to Little Fish Lake. The valley floor is generally higher than the adjacent valleys, except for Monitor Valley to the west, which is generally 100 to 300 feet higher than the corresponding areas in Little Fish Lake Valley. Annual precipitation varies from 8 inches on the valley bottom to 12 inches at the highest elevations. This moisture occurs mainly as snow during the winter months with infrequent thunderstorm activity during the summer months.

The Little Fish Lake JMA is located within the Central Nevada Basin and Range Major Land Resource Area (MLRA). This area is in the Great Basin Section of the Basin and Range Province of the Intermontane Plateaus. This MLRA supports saltbush-greasewood, big sagebrush, and pinyon-juniper woodland vegetation in the progression from the lowest to the highest elevation and precipitation. Shadscale, in association with bud sagebrush, spiny hopsage, ephedra, winterfat, fourwing saltbush, Indian ricegrass, squirreltail, and galleta, characterizes the saltbush-greasewood type. With an increase in moisture, plants associated with shadscale are replaced by needlegrasses, bluegrasses, bluebunch or beardless wheatgrass, basin wildrye, and forbs. Black greasewood and Nuttall saltbush are important on some sites. Big sagebrush and black sagebrush, which grows on soils that are shallow to an indurated pan or to bedrock, are dominant. In the pinyon-juniper woodland, bitterbrush, serviceberry, and snowberry grow in association with Utah juniper and singleleaf pinyon. The highest elevations support thickets of curl-leaf mountain mahogany and small amounts of mixed conifer forest with limber, bristlecone, or ponderosa pine, Douglas-fir, or white fir. On bottom lands, basin wildrye, creeping wildrye, alkali sacaton, wheatgrasses, bluegrasses, sedges, and rushes are typical. Black greasewood, rubber rabbitbrush, and big sagebrush grow on the drier sites. Inland saltgrass, alkali sacaton, black greasewood, rubber rabbitbrush, and big saltbush typify the vegetation on strongly saline-alkali soils (NRCS, 2006)

3.3. Wild Horses

Affected Environment

Little Fish Lake HMA/WHT

The Little Fish Lake HMA/WHT was originally designated as a BLM Herd Area following the passage of the WFRHBA of 1971. Public Law 100-550, the Nevada Enhancement Act (1988), added approximately 750,000 acres to Forest System Lands in the Toiyabe National Forest from public lands managed by BLM, which resulted in the USFS assuming management responsibility for large portions of the original Little Fish Lake HMA and the Wagon Johnnie Allotment. The HMA/WHT boundaries are nearly identical to the original herd area boundaries. The AML for the Wagon Johnnie Allotment (Little Fish Lake HMA/WHT) was established by a stipulated agreement between BLM and E. Wayne Hage, Colvin and Son Cattle Co., and Russell Ranches through USDI, Office of Hearings and Appeals, Departmental Cases Hearings Division signed May 11, 1992. AML was set for entire allotment at 132 wild horses. AML For the BLM portion was affirmed by the Tonopah RMP approved October 6, 1997. The RMP objectives state "*to manage wild horse and/or burro populations within Herd Management Areas at levels which will preserve and maintain a thriving natural ecological balance consistent with other multiple-use objectives*" and "*to manage wild horses and/or burros at appropriate management levels (AML) or interim herd size (IHS) for each HMA . . .* ." The current AML for the HMA is 39 and the AML for WHT is 93, making the overall AML for the JMA 132. The current estimated population is 350.

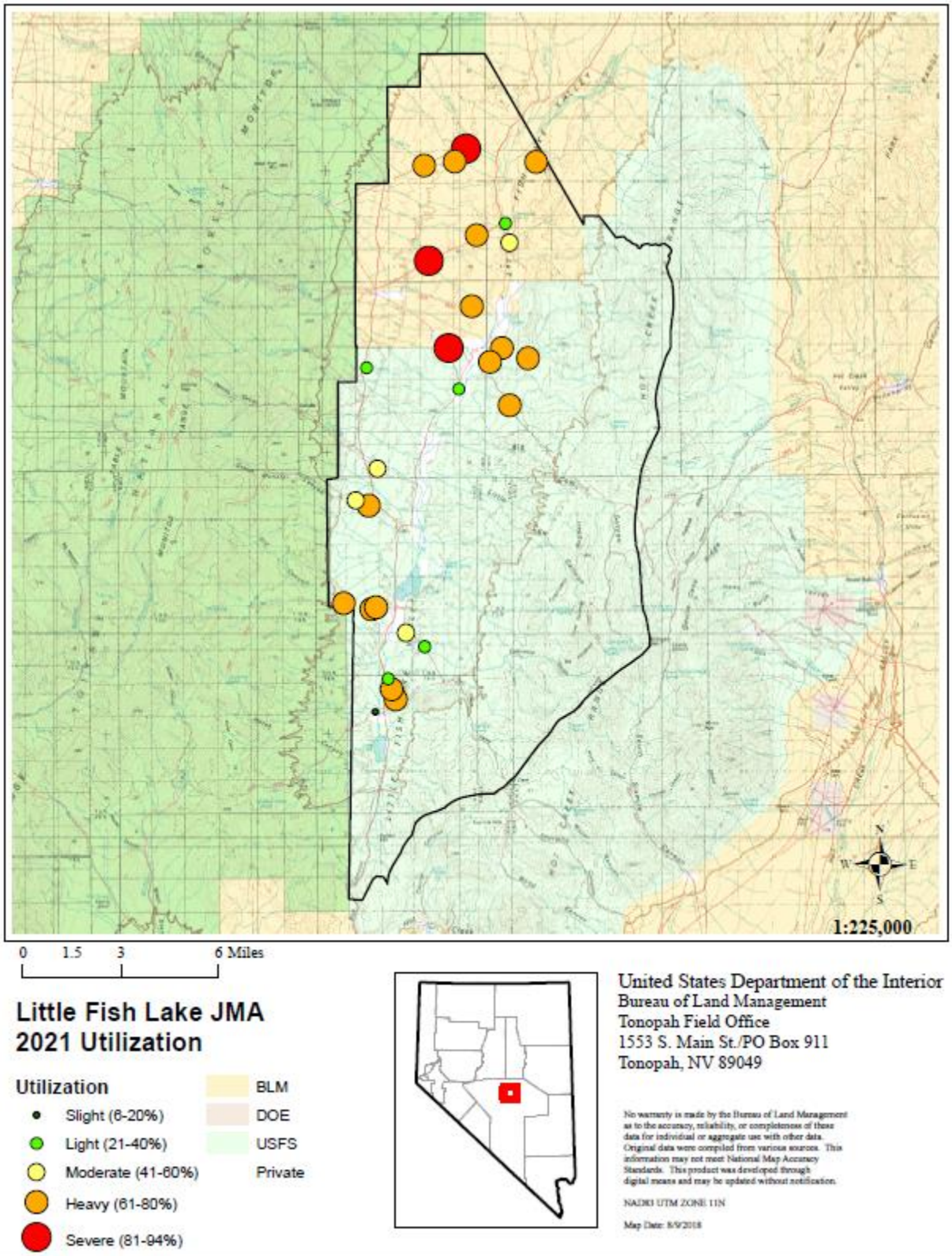
Water available for use by wild horses within the JMA is limited to a few perennial sources including Sevenmile Spring and Clear Creek which tend to produce water year-round. As water supplies become depleted at other smaller water sources, wild horses tend to concentrate around these primary water sources causing negative effects to riparian resources (see SI section 7). These water sources are monitored throughout the summer to make sure water is available for wild horses. During the summer or

when drought conditions exist in the JMA, wild horses will seek out water sources located on private property, often damaging fencing, wells, and troughs.

Drought is a common occurrence throughout Nevada and the Great Basin. Drought conditions during the period of March through June can substantially reduce annual production of forage, as well as have detrimental effects on vegetative health, especially under heavy or repeated grazing. According to the U.S. Drought Monitor (droughtmonitor.unl.edu), current drought conditions as of March 1, 2022, for Nye County range from severe to exceptional. The portions of the county where the JMA is located primarily fall under extreme (category D3) to exceptional (category D4) (Rippey 2022). Possible impacts due to these categories of drought could include: major crop/ pasture losses; widespread water shortages or restrictions; and shortages of water in reservoirs, streams, and wells creating water emergencies. As water becomes scarcer in the summer months, even less forage would be available as wild horses will travel shorter distances from the available water. With the current excess population of wild horses, severe range degradation may occur. Overall wild horse herd and individual health may also be at risk if AML is not achieved and maintained.

Rangeland resources have been and are currently being impacted within the Little Fish Lake HMA due to the over-population of wild horses. Utilization data was collected for Little Fish Lake HMA in December 2021 at 28 Key Areas (KAs). The key forage species monitored at that time include: Indian ricegrass (*Achnatherum hymenoides*), winterfat (*Krascheninnikovia lanata*), Squirreltail grass (*Elymus elymoides*) crested wheatgrass (*Agropyron cristatum*), and Needleandthread grass (*Hesperostipa comata*). Current monitoring data collected using Range Utilization Height-Weight Method for grasses and Landscape Appearance Method for shrubs over the last three years has indicated Moderate (41-60%), Heavy (61-80%), and Severe (81-94%) utilization directly attributable to wild horses at most sites. Use pattern mapping from December 2021 shows wild horse utilization for 11% of the monitoring locations as negligible (0-5%), 14% as light (21-40%), 21% as moderate (41-60%), 34% as heavy (61-80%), and 11% as severe (81-100%). Map 2 depicts use pattern mapping of the December 2021 utilization data. For the BLM-managed portion of the JMA, the 1997 Tonopah Resource Management Plan (RMP) allocated 28% of the forage for wild horses (468 of 1,687 AUMs). The RMP also specifies utilization of key perennial grass species should not exceed 50%, and key shrub species should not exceed 45%. As such, wild horse use should not exceed 14% on perennial grasses or 13% on shrubs. All plots on BLM-managed lands exceed this threshold.

Utilization data showed the majority of the JMA (16 of 28 sites) experienced heavy to severe horse use (61-100%), with many sites lacking key species in the interspaces and the reproductive capability of species severely limited. Many sites had young bunchgrasses uprooted by horse use. All of the KAs were primarily utilized by wild horses, though signs of cattle utilization were also apparent at many sites. Numerous sites and many roads throughout the JMA showed extensive wild horse trailing and stud piles. While some new growth of both grasses and shrubs was observed at most KAs, plant vigor for those individuals exhibiting heavy to severe utilization was lower than would otherwise be expected.



Map 2: Little Fish Lake JMA 2021 Utilization

Population inventory flights have been conducted in the JMA every two to three years. These population inventory flights have provided information pertaining to population numbers, foaling rates, distribution, and herd health. A population inventory was conducted in March 2021 utilizing a direct count and Double Simultaneous Count method and 242 wild horses were observed throughout the project area. Wild horse body condition scores (BCS) within the JMA currently range from a score of 2-5 (Very thin/emaciated – Moderate) based on the Henneke Body Condition Score.

Genetic monitoring and analysis was completed after the most recent gather conducted in 2015. As reported by Texas A&M, highest mean genetic similarity of the Little Fish Lake herd was with Light Racing and Riding breeds, followed closely by the Oriental and Arabian breeds. The results indicate a herd with mixed origins with no clear indication of primary breed type. In comparison to other feral herds from Nevada Little Fish Lake herd clusters close to the Seven Mile herd. Genetic variability of this herd in general is on the high side with only a moderate percentage of variation that is at risk. Genetic similarity results suggest a herd with mixed ancestry (Cothran, 2015).

Because of history, context, and periodic introductions, wild horses that inhabit the Little Fish Lake JMA should not be considered an isolated population (NRC 2013). Rather, managed herds of wild horses should be considered as components of interacting metapopulations, connected by interchange of individuals and genes due to both natural and human-facilitated movements. These animals are part of part of a larger metapopulation (NRC 2013) that has demographic and genetic connections with other BLM-managed herds in Nevada, Utah, and beyond. Pairwise Fst values support the conclusion that wild horses in the Little Fish Lake JMA are highly genetically similar (i.e., Fst <0.05; Frankham et al. 2010) to a large number of other wild horse herds (NRC, 2013). Wild horse herds in the larger metapopulation have a background of diverse domestic breed heritage, probably caused by natural and intentional movements of animals between herds.

The Little Fish Lake HMA and WHT are located within Central Nevada in the middle of a large number of contiguous or adjacent wild horse management areas that span from U.S. Highway 50 in the north to State Highway 6 in the south. All total, nine HMAs and eight WHTs exist and are contiguous or adjacent, spanning over three million acres. Approximately 5,000 wild horses inhabit this large set of herds within Central Nevada. With just the known and suspected movement through the Monitor WHT, Seven Mile and Stone Cabin HMAs, there is currently no concern for the genetic health of the horses of the Little Fish Lake JMA. Continued future monitoring of this JMA and the surrounding management areas will ensure adequate assessment of genetic health for all of the wild horse management areas in the region.

Genetic baseline data would be collected at regular periods to monitor the genetic diversity of the wild horses within the project area. Samples may also be taken for ancestral analysis. Analysis would determine whether management is maintaining acceptable genetic diversity (and avoiding excessive risk of inbreeding depression).

Under all action alternatives, wild horse introductions from other HMAs could be used if needed, to augment observed heterozygosity, which is a measure of genetic diversity, the result of which would be to reduce the risk of inbreeding-related health effects. Introducing a small number of fertile animals every generation (about every 8-10 years) is a standard management technique that can alleviate potential inbreeding concerns (BLM 2010). However, with the suspected movement of wild horses throughout the region, it is doubtful that such action would be necessary for the Little Fish Lake JMA.

The most recent gather conducted in the Little Fish Lake HMA was in February 2015 as a result of emergency conditions. A total of 147 wild horses were gathered, with 140 removed and seven released. There were no deaths or euthanasia. Prior to 2015, the JMA was gathered as part of a larger complex with the Seven Mile, Fish Creek, and North Monitor HMAs and associated WHTs in 2005 and 2006 to achieve

the AMLs throughout the Complex.

Environmental Effects

Proposed Action

The Proposed Action would decrease the existing overpopulation of wild horses in the course of successive helicopter drive, trap and bait, and water trapping operations over a period of ten years. Any mares that would be returned to the range would be treated with fertility control (PZP vaccines, GonaCon, IUDs). The objectives of this alternative include managing the Little Fish Lake JMA within the AML range. To account for population growth and reaching/exceeding AML in three years, the population would need to be reduced to 79 which would allow the population to grow and reach 132 wild horses for the JMA as established through the 1997 Tonopah RMP. Over the short-term, if the objective population level cannot be reached initially, individuals in the herd would still be subject to increased stress and possible death as a result of continued competition for water and forage until the project area's population can be reduced to the AML range. The areas experiencing heavy and severe utilization levels by wild horses would likely still be subject to some excessive use and impacts to rangeland resources, those being concentrated trailing, riparian trampling, increased bare ground, etc. These impacts would be expected to continue until the project area's population can be reduced to the AML range and concentration of horses can be reduced.

Removal of excess wild horses and achievement of the AML range would improve herd health. Decreased competition for forage and water resources would reduce stress and promote healthier animals. This removal of excess animals coupled with anticipated reduced reproduction (population growth rate) as a result of fertility control should result in improved health and condition of mares and foals as the actual population comes into line with the population level that can be sustained with available forage and water resources, and would allow for healthy range conditions (and healthy animals) over the longer-term. Additionally, reduced population growth rates would be expected to extend the time interval between required gathers and reduce disturbance to individual animals as well as to the herd social structure over the foreseeable future.

Bringing the wild horse population size within the AML range and slowing its growth rate once that level has been achieved would reduce damage to the range from the current overpopulation of wild horses and allow vegetation resources to start recovering, without the need for additional gathers in the interim. As a result, there would be fewer disturbances to individual animals and the herd, and a more stable wild horse social structure would be provided.

Impacts to individual animals may occur as a result of handling stress associated with the gathering, processing, and transportation of animals. The intensity of these impacts varies by individual animal and is indicated by behaviors ranging from nervous agitation to physical distress. Mortality to individual animals from these impacts is infrequent but does occur in 0.5% to 1% of wild horses gathered in a given gather (Scasta 2019). Other impacts to individual wild horses include separation of members of individual bands of wild horses and removal of animals from the population.

Indirect impacts can occur after the initial stress event and may include increased social displacement or increased conflict between stallions. These impacts are known to occur intermittently during wild horse gather operations. Traumatic injuries may occur; however, typical injuries involve bruises from biting and/or kicking, which do not break the skin.

BLMs Use of Contraception in Wild Horse Management

Expanding the use of population growth suppression to slow population growth rates and reduce the number of animals removed from the range and sent to Off-Range Pastures (ORPs) is a BLM priority. The WFRHBA of 1971 specifically provides for contraception and sterilization (section 3.b.1) as viable

management approaches. No finding of excess animals is required for BLM to pursue contraception in wild horses or wild burros. Contraception has been shown to be a cost effective and humane treatment to slow increases in wild horse populations or, when used with other techniques, to reduce horse population size (Bartholow 2004, de Seve and Boyles-Griffin 2013). All fertility control methods in wild animals are associated with potential risks and benefits, including effects of handling, frequency of handling, physiological effects, behavioral effects, and reduced population growth rates (Hampton et al. 2015). Contraception by itself does not remove excess horses from an HMA's population, so if a wild horse population is in excess of AML, then contraception alone would result in some continuing environmental effects of horse overpopulation. Successful contraception reduces future reproduction. Limiting future population increases of horses could limit increases in environmental damage from higher densities of horses than currently exist. Horses are long-lived, potentially reaching 20 years of age or more in the wild and, if the population is above AML, treated horses returned to an HMA may continue exerting negative environmental effects, as described in the sections (PZP Direct Effects and GnRH) below, throughout their life span. In contrast, if horses above AML are removed when horses are gathered, that leads to an immediate decrease in the severity of ongoing detrimental environmental effects throughout their lifespan, as described above. See Section 8.0 of the SI for a more detailed analysis on fertility control.

Fertility Control Vaccines

Fertility control vaccines (also known as immunocontraceptives) meet BLM requirements for safety to mares and the environment (EPA 2009a, 2012). Because they work by causing an immune response in treated animals, there is no risk of hormones or toxins being taken into the food chain when a treated mare dies. The BLM and other land managers have mainly used three fertility control vaccine formulations for fertility control of wild mares on the range: ZonaStat-H, PZP-22, and GonaCon-Equine. As other formulations become available, they may be applied in the future.

In any vaccine, the antigen is the stimulant to which the body responds by making antigen-specific antibodies. Those antibodies then signal to the body that a foreign molecule is present, initiating an immune response that removes the molecule or cell. Adjuvants are additional substances that are included in vaccines to elevate the level of immune response. Adjuvants help to incite recruitment of lymphocytes and other immune cells which foster a long-lasting immune response that is specific to the antigen.

Liquid emulsion vaccines can be injected by hand or remotely administered in the field using a pneumatic dart (Roelle and Ransom 2009, Rutberg et al. 2017, McCann et al. 2017) in cases where mares are relatively approachable. Use of remotely delivered (dart-delivered) vaccine is generally limited to populations where individual animals can be accurately identified and repeatedly approached within 50 meters (BLM 2010). Booster doses can be safely administered by hand or by dart. Even with repeated booster treatments of the vaccines, it is expected that most mares would eventually return to fertility, though some individual mares treated repeatedly may remain infertile. Once the herd size in a project area is at AML and population growth seems to be stabilized, BLM can make adaptive determinations as to the required frequency of new and booster treatments.

BLM has followed SOPs for fertility control vaccine application (BLM IM 2009-090, Supplemental Information Report at heading 9.0). Herds selected for fertility control vaccine use should have annual growth rates over 5%, have a herd size over 50 animals, and have a target rate of treatment of between 50% and 90% of female wild horses or burros. The IM requires that treated mares be identifiable via a visible freeze brand or individual color markings so that their vaccination history can be known. The IM calls for follow-up population surveys to determine the realized annual growth rate in herds treated with fertility control vaccines.

Porcine Zona Pellucida (PZP) Vaccine

For additional detail about the use of PZP as a fertility control agent, please refer to the Supplemental Information Report at heading 7.1, and the Standard Operating Procedures at heading 9.0. PZP may be applied to mares prior to their release back into the HMA. PZP vaccines meet most of the criteria that the National Research Council (2013) used to identify promising fertility control methods, in terms of delivery method, availability, efficacy, and side effects. PZP is relatively inexpensive, meets BLM requirements for safety to mares and the environment, and is produced as the liquid PZP vaccine ZonaStat-H, an EPA-registered commercial product (EPA 2012, SCC 2015), or as PZP-22, which is a formulation of PZP in polymer pellets that may lead to a longer immune response (Turner et al. 2002, Rutberg et al. 2017). Currently, ZonStat_H can also be applied via remote darting in the field.

For the PZP-22 vaccine pellet formulation administered during gathers, each released mare would receive a single dose of the PZP contraceptive vaccine pellets at the same time as a dose of the liquid PZP vaccine with modified Freund's Complete Adjuvant. Most mares recover from the stress of capture and handling quickly once released back into the HMA and none are expected to suffer serious long-term effects from the injections, other than the direct consequence of becoming temporarily infertile. Injection site reactions associated with fertility control treatments are possible in treated mares (Roelle and Ransom 2009, Bechert et al. 2013, French et al. 2017), but swelling or local reactions at the injection site are expected to be minor in nature. In subsequent years, Native PZP (or the currently most effective formulation) could be administered as a booster dose using the one-year liquid PZP vaccine by field or remote darting. The dart-delivered formulation produced injection-site reactions of varying intensity, though none of the observed reactions appeared debilitating to the animals (Roelle and Ransom 2009). Joonè et al. (2017a) found that injection site reactions had healed in most mares within three months after the booster dose, and that they did not affect movement or cause fever.

Darting can be implemented opportunistically by applicators near water sources or along main trails out on the range. Blinds may be used to camouflage applicators to allow efficient treatment of as many mares as possible. Applicators would be trained and certified in darting techniques and recordkeeping protocols. A tracking database would be utilized to document treated mares, and the history of treatment and foal production. This would include a list of marked horses and/or a photo catalog with descriptions of the animals to assist in identifying which ones have been treated and which ones still need to be treated. Application of fertility control treatment would be conducted in accordance with the approved standard operating and post-treatment monitoring procedures (SOPs, Supplemental Information Report).

The historically accepted hypothesis explaining PZP vaccine effectiveness assumes that when injected as an antigen in vaccines, PZP causes the mare's immune system to produce antibodies that are specific to zona pellucida proteins on the surface of that mare's eggs. The antibodies bind to the mare's eggs surface proteins (Liu et al. 1989), and effectively block sperm binding and fertilization (Zoo Montana, 2000). Because treated mares do not become pregnant but other ovarian functions remain generally unchanged, PZP can cause a mare to continue having regular estrus cycles throughout the breeding season. Other research has shown, though, that there may be changes in ovarian structure and function due to PZP vaccine treatments (e.g., Joonè et al. 2017b, 2017c). Research has demonstrated that contraceptive efficacy of an injected liquid PZP vaccine, such as ZonaStat-H, is approximately 90% or more for mares treated twice in one year (Turner and Kirkpatrick 2002, Turner et al. 2008). The highest success for fertility control has been reported when the vaccine has been applied November through February. High contraceptive rates of 90% or more can be maintained in horses that are boostered annually with liquid PZP (Kirkpatrick et al. 1992). Approximately 60% to 85% of mares are successfully contracepted for one year when treated simultaneously with a liquid primer and PZP-22 pellets (Rutberg et al. 2017). Application of PZP for fertility control would reduce fertility in a large percentage of mares for at least one year (Ransom et al. 2011). Detailed analysis of the effects of PZP is provided in the Supplemental Information Report at 8.0.

Gonadotropin Releasing Hormone (GnRH) Vaccine (GonaCon)

GonaCon may be applied to mares prior to their release back into the HMA. Taking into consideration available literature on the subject, the National Research Council concluded in their 2013 report that Gona-Con-B (which is produced under the trade name GonaCon-Equine for use in feral horses and burros) was one of the most preferable methods available for contraception in wild horses and burros (NRC 2013), in terms of delivery method, availability, efficacy, and side effects. GonaCon-Equine is approved for use by authorized federal, state, tribal, public and private personnel for application to wild and feral equids in the United States (EPA 2013, 2015). Additional detail about the use of GonaCon is available in the Supplemental Information Report at heading 7.2.

GonaCon is an immunocontraceptive vaccine which has been shown to provide multiple years of infertility in several wild ungulate species, including horses (Killian et al., 2008; Gray et al., 2010). GonaCon uses the gonadotropin-releasing hormone (GnRH), a small neuropeptide that performs an obligatory role in mammalian reproduction, as the vaccine antigen. When combined with an adjuvant, the GnRH vaccine stimulates a persistent immune response resulting in prolonged antibody production against GnRH, the carrier protein, and the adjuvant (Miller et al., 2008). The most direct result of successful GnRH vaccination is that it has the effect of decreasing the level of GnRH signaling in the body, as evidenced by a drop in luteinizing hormone levels, and a cessation of ovulation. The lack of estrus cycling that results from successful GonaCon vaccination has been compared to typical winter period of anestrus in open mares. As anti-GnRH antibodies decline over time, concentrations of available endogenous GnRH increase and treated animals usually regain fertility (Power et al., 2011).

Changes in hormones associated with anti-GnRH vaccination led to measurable changes in ovarian structure and function. The volume of ovaries reduced in response to treatment (Garza et al. 1986, Dalin et al. 2002, Imboden et al. 2006, Elhay et al. 2007, Botha et al. 2008, Gionfriddo 2011a, Dalmau et al. 2015). Treatment with an anti-GnRH vaccine changes follicle development (Garza et al. 1986, Stout et al. 2003, Imboden et al. 2006, Elhay et al. 2007, Donovan et al. 2013, Powers et al. 2011, Balet et al. 2014), with the result that ovulation does not occur.

BLM may apply GonaCon-Equine to captured mares and could return to the HMA as needed to reapply GonaCon-Equine by field or remote darting. GonaCon-Equine can safely be reapplied as necessary to control the population growth rate. Even with one booster treatment of GonaCon-Equine, it is expected that most, if not all, mares would return to fertility at some point, although the average duration of effect after booster doses has not yet been quantified. Although it is unknown what would be the expected rate for the return to fertility rate in mares boosted more than once with GonaCon-Equine, a prolonged return to fertility would be consistent with the desired effect of using GonaCon (e.g., effective contraception). Once the herd size in the project area is at AML and population growth seems to be stabilized, BLM could make a determination as to the required frequency of new mare treatments and mare re-treatments with GonaCon to maintain the number of horses within AML.

Injection site reactions associated with immunocontraceptive treatments are possible in treated mares (Roelle and Ransom 2009). Whether injection is by hand or via darting, GonaCon-Equine is associated with some degree of inflammation, swelling, and the potential for abscesses at the injection site (Baker et al. 2018). Swelling or local reactions at the injection site are generally expected to be minor in nature, but some may develop into draining abscesses. Detailed analysis of the effects of GonaCon are located in the Supplemental Information Report at 8.0.

PZP and GonaCon Indirect Effects

One expected long-term, indirect effect on wild horses treated with fertility control such as PZP or GonaCon would be an improvement in their overall health (Turner and Kirkpatrick 2002). Many treated mares would not experience the biological stress of reproduction, foaling, and lactation as frequently as untreated mares. The observable measure of improved health is higher body condition scores (Nuñez et al. 2010). After a

treated mare returns to fertility, her future foals would be expected to be healthier overall and would benefit from improved nutritional quality in the mare's milk. This is particularly to be expected if there is an improvement in rangeland forage quality at the same time, due to reduced wild horse population size. Past application of fertility control has shown that mares' overall health and body condition remains improved even after fertility resumes. Fertility control vaccine treatment may increase mare survival rates, leading to longer potential lifespan (Turner and Kirkpatrick 2002, Ransom et al. 2014a). To the extent that this happens, changes in lifespan and decreased foaling rates could combine to cause changes in overall age structure in a treated herd (i.e., Turner and Kirkpatrick 2002, Roelle et al. 2010), with a greater prevalence of older mares in the herd (Gross 2000). Observations of mares treated in past gathers showed that many of the treated mares were larger than, maintained higher body condition than, and had larger healthy foals than untreated mares. For additional information, refer to the Supplemental Information Report section 8.0.

Alternative B

Under this alternative the BLM would gather and remove excess animals to within AML range without mare fertility control. Environmental effects from this alternative would initially be similar to the gathering and handling impacts under the Proposed Action. However, over the longer- term not utilizing fertility control under Alternative B would mean that wild horses remaining in the JMA after gathers conducted would continue to reproduce at a rate of 15-25% annually. This would result in the population meeting and/or exceeding AML more quickly than under Alternative A, requiring that maintenance gathers be conducted more frequently. Gathers conducted under Alternative B could be completed as gate-cut gathers where only enough horses are gathered and removed to achieve the AML goal, or as selective removal where removal criteria such as age and conformation could be utilized to choose which horses are to be released in order to improve wild horse health and characteristics and remove only adoptable horses while releasing the older horses back to the range. Mares would not endure the additional stress of being vaccinated or microchipped while restrained in the working chute. A gate cut scenario could reduce the opportunity for selection of quality horses for release back to the range and selection of desired ages to ship to adoption which could result in additional older or unadoptable horses being sent to ORPs rather than being released to the range.

Effects Common to the Proposed Action and Alternative B

Over the past 35 years, various impacts to wild horses as a result of gather activities have been observed. Under the Proposed Action, potential impacts to wild horses would be both direct and indirect, occurring to both individual horses and the population as a whole.

Helicopter Drive Trapping

The BLM has been conducting wild horse gathers since the mid-1970s. and has been using helicopters for such gathers since the late 1970's. During this time, methods and procedures have been identified and refined to minimize stress and impacts to wild horses during gather implementation. Published reviews of agency practice during gathers and subsequent holding operations confirm that BLM follows guidelines to minimize those impacts and ensure humane animal care and high standards of welfare (GAO 2008, AAEP 2011, Greene et al. 2013, Scasta 2019). Refer to Sections 4 and 5 of the SI for information on the methods that are utilized to reduce injury or stress to wild horses and burros during gathers. The Comprehensive Animal Welfare Program (CAWP), PIM 2021-002 would be implemented to ensure a safe and humane gather occurs and would minimize potential stress and injury to wild horses.

In any given gather, gather-related mortality averages only about one half of one percent (0.5%), which is very low when handling wild animals. Approximately, another six-tenths of one percent (0.6%) of the captured animals, on average, are humanely euthanized due to pre-existing conditions and in accordance

with BLM policy (GAO 2008, Scasta 2019). Pre-existing conditions include such things as club feet, teeth worn to the gums of older horses, poor body condition and old breaks to limbs that healed poorly. These data affirm that the use of helicopters and motorized vehicles has proven to be a safe, humane, effective, and practical means for the gather and removal of excess wild horses (and burros) from the public lands. The BLM also avoids gathering wild horses by helicopter during the 6 weeks prior to and following the expected peak of the foaling season (i.e., from March 1 through June 30).

Individual, direct impacts to wild horses include the handling stress associated with the roundup, capture, sorting, handling, and transportation of the animals. The intensity of these impacts varies by individual and is indicated by behaviors ranging from nervous agitation to physical distress. When being herded to trap site corrals by the helicopter, injuries sustained by wild horses may include bruises, scrapes, or cuts to feet, legs, face, or body from rocks, brush or tree limbs. Rarely, wild horses will encounter barbed wire fences and will receive wire cuts. These injuries are very rarely fatal and are treated on-site until a veterinarian can examine the animal and determine if additional treatment is indicated.

Other injuries may occur after a horse has been captured and is either within the trap site corral, the temporary holding corral, during transport between facilities, or during sorting and handling. Occasionally, horses may sustain a spinal injury or a fractured limb but based on prior gather statistics, serious injuries requiring humane euthanasia occur in less than 1 horse per every 100 captured. Similar injuries could be sustained if wild horses were captured through bait and/or water trapping, as the animals still need to be sorted, aged, transported, and otherwise handled following their capture. These injuries can result from kicks and bites, or from collisions with corral panels or gates.

To minimize the potential for injuries from fighting, the animals are transported from the trap site to the temporary holding facility where they are sorted as quickly and safely as possible, then moved into large holding pens where they are provided with hay and water. Fatalities and injuries due to gathers are few and far between with direct gather related mortality averaging less then 1%. Most injuries are a result of the horse's temperament, meaning they do not remain calm and lash out more frequently.

Gathering wild horses during the summer months can potentially cause heat stress. Gathering wild horses during the fall/winter months reduces risk of heat stress, although this can occur during any gather, especially in older or weaker animals. Adherence to the SOPs, CAWP, and techniques used by the gather contractor or BLM staff will help minimize the risks of heat stress. Heat stress does not occur often, but if it does, death can result. Most temperature related issues during a gather can be mitigated by adjusting daily gather times to avoid the extreme hot or cold periods of the day. The BLM and the contractor would be pro-active in controlling dust in and around the holding facility and the gather corrals to limit the horses' exposure to dust.

Indirect individual impacts are those which occur to individual wild horses after the initial event. These may include miscarriages in mares, increased social displacement, and conflict in studs. These impacts, like direct individual impacts, are known to occur intermittently during wild horse gather operations. An example of an indirect individual impact would be the brief 1-2 minute skirmish between older studs which ends when one stud retreats. Injuries typically involve a bite or kick with bruises which do not break the skin. Like direct individual impacts, the frequency of these impacts varies with the population and the individual. Observations following capture indicate the rate of miscarriage varies but can occur in about 1 to 5% of the captured mares, particularly if the mares are in very thin body condition or in poor health. A few foals may be orphaned during a gather. This can occur if the mare rejects the foal, the foal becomes separated from its mother and cannot be matched up following sorting, the mare dies or must be humanely euthanized during the gather, the foal is ill or weak and needs immediate care that requires removal from the mother, or the mother does not produce enough milk to support the foal. On occasion, foals are gathered that were previously orphaned on the range (prior to the gather) because the mother

rejected it or died. These foals are usually in poor condition. Every effort is made to provide appropriate care to orphan foals. Gather staff may administer electrolyte solutions or orphan foals may be fed milk replacer as needed to support their nutritional needs. Orphan foals may be placed in a foster home in order to receive additional care. Despite these efforts, some orphan foals may die or be humanely euthanized as an act of mercy if the prognosis for survival is very poor.

Through the capture and sorting process, wild horses are examined for health, injury and other defects. Decisions to humanely euthanize animals in field situations would be made in conformance with BLM policy. BLM PIM 2021-007 is used as a guide to determine if animals meet the criteria and should be euthanized (refer to CAWP). Animals that are euthanized for non-gather related reasons include those with old injuries (broken or deformed limbs) that cause lameness or prevent the animal from being able to maintain an acceptable body condition (greater than or equal to BCS 3); old animals that have serious dental abnormalities or severely worn teeth and are not expected to maintain an acceptable body condition, and wild horses that have serious physical defects such as club feet, severe limb deformities, or sway back. Some of these conditions have a causal genetic component such that the animals should not be returned to the range; this prevents suffering and avoids amplifying the incidence of the deleterious gene in the wild population.

Wild horses not captured may be temporarily disturbed and moved into another area during the gather operation. With the exception of changes to herd demographics from removals, direct population impacts have proven to be temporary in nature with most, if not all, impacts disappearing within hours to several days of release. No observable effects associated with these impacts would be expected within one month of release, except for a heightened awareness of human presence.

It is not expected that genetic health would be affected by the Proposed Action. Available indications are that these populations contain high levels of genetic diversity at this time. The AML of 132 wild horses in the Little Fish Lake JMA in relation to the number of HMAs and WHTs within the region should provide for acceptable genetic diversity. If at any time in the future the genetic diversity in the Little Fish Lake JMA is determined to be relatively low, then a number of other HMAs in the region could be used as sources for fertile wild horses that could be transported into the area of concern.

By maintaining wild horse population size near the AML, there would be a lower density of wild horses across the Little Fish Lake JMA, reducing competition for resources and allowing the wild horses that remain to use their preferred habitat. Maintaining population size near the established AML would be expected to improve forage quantity and quality and promote healthy, self-sustaining populations of wild horses in a TNEB and multiple use relationship on the public lands in the area. Deterioration of the range associated with wild horse overpopulation would be reduced. Managing wild horse populations in balance with the available habitat and other multiple uses would lessen the potential for individual animals or the herd to be affected by drought and would avoid or minimize the need for emergency gathers. All this would reduce stress to the animals and increase the success of these herds over the long-term.

Water/Bait Trapping

Bait and/or water trapping generally requires a long window of time for success. Although the trap would be set in a high probability area for capturing excess wild horses residing within the area and at the most effective time periods, time is required for the horses to acclimate to the trap and/or decide to access the water/bait. The Comprehensive Animal Welfare Program (CAWP), PIM 2021-002 would be implemented to ensure a safe and humane gather occurs and would minimize potential stress and injury to wild horses.

Trapping involves setting up portable panels around an existing water source or in an active wild horse area, or around a pre-set water or bait source. The portable panels would be set up to allow wild horses to go freely in and out of the corral until they have adjusted to it. When the wild horses fully adapt to the

corral, it is fitted with a gate system. The acclimatization of the wild horses creates a low stress trap. During this acclimation period the horses would experience some stress due to the panels being setup and perceived access restriction to the water/bait source.

When actively trapping wild horses, the trap would be checked on a daily basis. Wild horses would be either removed immediately or fed and watered for up to several days prior to transport to a holding facility. Existing roads would be used to access the trap sites.

Gathering of the excess wild horses utilizing bait/water trapping could occur at any time of the year and would extend until the target number of animals are removed to relieve concentrated use by horses in the area, reach AML, to implement population control measures, and to remove animals residing outside HMA boundaries. Generally, bait/water trapping is most effective when a specific resource is limited, such as water during the summer months. For example, in some areas, a group of wild horses may congregate at a given watering site during the summer because few perennial water resources are available nearby. Under those circumstances, water trapping could be a useful means of reducing the number of wild horses at a given location, which can also relieve the resource pressure caused by too many horses. As the proposed bait and/or water trapping in this area is a low stress approach to gathering of wild horses, such trapping can continue into the foaling season without harming the mares or foals.

Impacts to individual animals would be similar to those for helicopter gathers and could occur as a result of stress associated with the gather, capture, processing, and transportation of animals. The intensity of these impacts would vary by individual and would be indicated by behaviors ranging from nervous agitation to physical distress. Mortality of individual horses from these activities is rare but can occur. Other impacts to individual wild horses include separation of members of individual bands and removal of animals from the population.

Indirect impacts can occur to horses after the initial stress event and could include increased social displacement or increased conflict between studs. These impacts are known to occur intermittently during wild horse gather operations. Traumatic injuries could occur and typically involve bruises caused by biting and/or kicking. Horses may potentially strike or kick gates, panels or the working chute while in corrals or trap which may cause injuries. These impacts, like direct individual impacts, are known to occur intermittently during wild horse gather operations. Since handling, sorting and transportation of horses would be similar to those activities under Helicopter drive trapping, the direct and indirect impacts would be expected to be similar as well. Past gather data shows that euthanasia, injuries and death rates for both types of gathers are similar.

Transport, Off-range Corrals, Off-range Pastures, and Adoption Preparation
During transport, potential impacts to individual horses can include stress, as well as slipping, falling, kicking, biting, or being stepped on by another animal. Unless wild horses are in extremely poor condition, it is rare for an animal to die during transport.

Recently captured wild horses, generally mares, in very thin condition may have difficulty transitioning to feed. A small percentage of animals can die during this transition; however, some of these animals are in such poor condition that it is unlikely they would have survived if left on the range.

During the preparation process, potential impacts to wild horses are similar to those that can occur during transport. Injury or mortality during the preparation process is low but can occur.

Mortality at off-range corrals (ORCs, formerly short-term holding) facilities averages approximately 5% (GAO-09-77, Page 51), which includes animals euthanized due to a pre-existing condition, animals in extremely poor condition, animals that are injured and would not recover, animals that are unable to

transition to feed; and animals that die accidentally during sorting, handling, or preparation.

Off-Range Pastures (ORPs formerly known as long-term pastures), are designed to provide excess wild horses with humane, and in some cases life-long care in a natural setting off the public rangelands. There, wild horses are maintained in grassland pastures large enough to allow free-roaming behavior and with the forage, water, and shelter necessary to sustain them in good condition. Mares and sterilized stallions (geldings) are segregated into separate pastures. About 39,000 wild horses that are in excess of the current adoption or sale demand (because of age or other factors such as economic recession) are currently located on private land pastures in Oklahoma, Kansas, Iowa, Missouri, Montana, Nebraska, Utah, Wyoming, Washington, and South Dakota. The establishment of ORPs is subject to a separate NEPA and decision-making process. Located mainly in mid or tall grass prairie regions of the United States, these ORPs are highly productive grasslands compared to more arid western rangelands. These pastures comprise about 400,000 acres (an average of about 10-11 acres per animal). Of the animals currently located in ORP, less than one percent is age 0-4 years, 49 percent are age 5-10 years, and about 51 percent are age 11+ years.

Potential impacts to wild horses from transport to adoption, sale or ORP are similar to those previously described. One difference is when shipping wild horses for adoption, sale or ORPs, animals may be transported for up to a maximum of 24 hours. Immediately prior to transportation, and after every 24 hours of transportation, animals are offloaded and provided a minimum of 8 hours on-the-ground rest. During the rest period, each animal is provided access to unlimited amounts of water and two pounds of good quality hay per 100 pounds of body weight with adequate space to allow all animals to eat at one time.

A small percentage of the animals may be humanely euthanized if they are in very poor condition due to age or other factors. Horses residing on ORP facilities live longer, on the average, than wild horses residing on public rangelands, and the natural mortality of wild horses in ORP averages approximately 8% per year, but can be higher or lower depending on the average age of the horses pastured there (GAO-09-77, Page 52).

Wild Horses Remaining or Released Back into the JMA following Gather Under the Proposed Action and Alternative B

The wild horses that are not captured may be temporarily disturbed and may move into another area during the gather operations. With the exception of changes to herd demographics and their direct population- wide impacts from a gather have proven, over the last 20 years, to be temporary in nature with most if not all impacts disappearing within hours to several days of when wild horses are released back into the HMAs.

No observable effects associated with these impacts would be expected within one month of release, except for a heightened awareness of human presence, and possible changes in specific band composition. There is the potential for the horses that have been desensitized to vehicles and human activities to return to areas where they were gathered if released back into HMAs. The wild horses that remain in the Little Fish Lake JMA following the gather would maintain their social structure and herd demographics (age and sex ratios) as the proposed gathers would mainly be targeting specific individual or bands of horses. No observable effects to the remaining population from the gather would be expected.

No Action Alternative

Under the No Action Alternative, no population growth suppression action or wild horse removals (gathers) would take place. The population of the wild horses within the Little Fish Lake JMA would continue to grow at the national average rate of increase seen in the majority of HMAs of 20 to 25% per year.

Neither AML or a TNEB would be achieved, and excess concentrations of wild horses would continue to impact site specific areas throughout the JMA into the future. The animals would not be subject to the individual direct or indirect impacts as a result of a trapping operation. Over the short-term, individual animals in the herd would be subject to increased stress and possible death as a result of increased competition for water and/or forage as the population continues to grow even further in excess of the land's capacity to meet the wild horses' habitat needs. The areas currently experiencing heavy to severe utilization by wild horses would increase over time and degradation could become irreversible in areas where ecological thresholds are passed.

Under this alternative damage to rangeland resources throughout the JMA would increase. Trampling and trailing damage by wild horses in/around riparian and impacts to rangeland resources would also be expected to increase, resulting in larger, more extensive areas of poor range condition, some of which might be unable to recover even after removal of excess horses. Competition for the available water and forage among wild horses, domestic livestock, and native wildlife would continue and further increase.

Wild horses are a long-lived species with survival rates estimated between 80 and 97% and may be the determinant of wild horse population increases (Garrott and Taylor 1990, Ransom et al. 2016). Predation and disease have not substantially regulated wild horse population levels within or outside the project area. Throughout the HMAs few predators exist to control wild horse populations. Some mountain lion predation occurs but does not appear to be substantial, as evidenced by the continued high growth rates in the herds. Coyotes are not prone to prey on wild horses unless the horses are young, or extremely weak. Other predators such as wolf or bear do not inhabit the area in high enough numbers to cause an effect on horse growth rates. Being a non-self-regulating species (NRC 2013), there would be a steady increase in wild horse numbers for the foreseeable future, which would continue to exceed the carrying capacity of the range. Individual wild horses would be at risk of death by starvation and lack of water as the population continues to grow annually. The wild horses would compete for the available water and forage resources, affecting mares and foals most severely. Social stress would increase. Fighting among stud horses would increase as well as injuries and death to all age classes of animals as the studs protect their position at scarce water sources. Significant loss of the wild horses in the JMA due to starvation or lack of water would have obvious consequences to the long-term viability of the herd. Allowing wild horses to die of dehydration and starvation would be inhumane treatment and would be contrary to the WFRHBA, which mandates removal of excess wild horses.

The damage to rangeland resources that results from excess numbers of wild horses is also contrary to the WFRHBA, which mandates the Bureau to "protect the range from the deterioration associated with overpopulation", "remove excess animals from the range so as to achieve appropriate management levels", and "to preserve and maintain a thriving natural ecological balance and multiple-use relationship in that area." Once the vegetative and water resources are at critically low levels due to excessive utilization by an overpopulation of wild horses, the weaker animals, generally the older animals and the mares and foals, are the first to be impacted. It is likely that a majority of these animals would die from starvation and dehydration. The resultant population would be extremely skewed towards the stronger stallions which would lead to significant social disruption in the JMA. By managing the public lands in this way, the vegetative and water resources would be impacted first and to the point that they have limited potential for recovery, as is already occurring in some areas hardest hit by the excess wild horses. As a result, the No Action Alternative, by delaying the removal of excess horses from specific areas that are most impacted at this time, would not ensure healthy rangelands that would allow for the management of a healthy wild horse population, and would not promote a TNEB.

As populations increase beyond the capacity of the habitat, more bands of horses would also leave the boundaries of the JMA in search of forage and water, thereby increasing impacts to rangeland resources

outside the JMA boundaries as well. This alternative would result in increasing numbers of wild horses in areas not designated for their use and would not achieve a TNEB.

Population Modeling

Population modeling was completed for the proposed action and alternatives to analyze how the alternatives would affect the wild horse populations. Analysis included removal of excess wild horses with no fertility control, as compared to alternatives which consider removal of excess wild horses with fertility control. The No Action (no removal) Alternative was also modeled (Section 3.0 of the SI). The primary objective of the modeling was to identify if any of the alternatives "crash" the population or cause extremely low population numbers or growth rates. The results of population modeling show that minimum population levels and growth rates would be within reasonable levels and adverse impacts to the population would not be likely under Alternatives A and B. Graphic and tabular results are displayed in detail in Section 3.0 of the SI.

Cumulative Effects

Cumulative Effects of the Proposed Action

In the future, application of population growth suppression techniques (i.e. PZP, PZP-22, and GonaCon) and adjustment in sex ratios would be expected to slow total population growth rates, and to result in fewer gathers with less frequent disturbance to individual wild horses and the herd's social structure. However, return of wild horses back into the JMA could lead to decreased ability to effectively gather horses in the future as released horses learn to evade gather operations. The effect may be reduced gather effectiveness and the ability to capture a smaller portion of the population with each consecutive operation.

Cumulative Effects of the Proposed Action and Alternative B.

A gather would ultimately benefit wild horses and rangeland resources. During gather operations, wild horses would be provided adequate feed and water at temporary and short-term holding. Removal of excess wild horses would allow for reduced competition for the remaining resources left on the range. Removal of excess wild horses would ensure that individual animals do not perish due to starvation, dehydration, or other health concerns related to insufficient feed and water and extreme dust conditions. Additionally, a gather would remove excess wild horses while they remain in adequate health to transition to feed.

The cumulative effects associated with the capture and removal of excess wild horses include gather-related mortality of less than 1% of the captured animals, about 5% per year associated with transportation, ORCs, adoption or sale with limitations and about 8% per year associated with ORPs. These rates are comparable to natural mortality on the range ranging from about 5-8% per year for foals (animals under age 1), about 5% per year for horses ages 1-15, and 5-100% for animals age 16 and older (Stephen Jenkins, 1996, Garrott and Taylor, 1990). In situations where forage and/or water are limited, mortality rates in the wild increase, with the greatest impact to young foals, nursing mares and older 39 horses. Animals can experience lameness associated with trailing to/from water and forage, foals may be orphaned (left behind) if they cannot keep up with their mare, or animals may become too weak to travel. After suffering, often for an extended period, the animals may die. Before these conditions arise, the BLM generally removes the excess animals to prevent their suffering from dehydration or starvation.

While humane euthanasia and sale without limitation of healthy horses for which there is no adoption demand is authorized under the WFRHBA, Congress prohibited the use of appropriated funds between 1987 and 2004 and again in 2010 to present for this purpose. If Congress were to lift the current appropriations restrictions, then it is possible that excess horses removed from the Complex over the next 10 years could potentially be euthanized or sold without limitation consistent with the provisions of the WFRHBA.

The other cumulative effects which would be expected when incrementally adding either of the Action Alternatives to the cumulative study area would include continued improvement of upland and riparian vegetation conditions, which would in turn benefit permitted livestock, native wildlife, and wild horse population as forage (habitat) quality and quantity is improved over the current level. Benefits from a reduced wild horse population would include fewer animals competing for limited forage and water resources. Cumulatively, there should be more stable wild horse populations, healthier rangelands, healthier wild horses, and fewer multiple use conflicts in the area over the short and long-term. Over the next 10 years, continuing to manage wild horses within the established AML range would achieve a thriving natural ecological balance and multiple use relationship on public lands in the area.

Cumulative Effects of the No Action Alternative
Under the No Action Alternative, the wild horse population within the Little Fish Lake JMA could exceed 330 in two years, nearly three times AML. Continued and expanded movement outside the HMAs would be expected as greater numbers of horses search for food and water for survival, thus impacting larger areas of public lands and threatening public safety as wild horses cross highways in search of forage. Heavy to Severe utilization of the available forage would continue to be expected and the water available for use would become increasingly limited. Ecological plant communities would continue to be damaged to the extent that they would no longer be sustainable, and the wild horse population would be expected to crash; this result would be expedited under drought conditions. As wild horse populations continue to increase within and outside the JMA, rangeland degradation intensifies on public lands. Also as wild horse populations increase, concerns regarding public safety along highways increase as well as conflicts with private land. Wild horses that reside along highways would continue to come on to the highways in many areas during the evenings or early mornings looking for forage and salt along the pavement, posing a hazard to motorists.

Emergency removals could be expected in order to prevent individual animals from suffering or death as a result of insufficient forage and water. During emergency conditions, competition for the available forage and water increases. This competition generally impacts the oldest and youngest horses as well as lactating mares first. These groups would experience substantial weight loss and diminished health, which could lead to their prolonged suffering and eventual death. If emergency actions are not taken when emergency conditions arise, the overall population could be affected by severely skewed sex ratios towards stallions as they are generally the strongest and healthiest portion of the population. An altered age structure would also be expected.

Cumulative impacts of the no action alternative would result in foregoing the opportunity to improve rangeland health and to properly manage wild horses in balance with the available forage and water and other multiple uses. Attainment of site-specific vegetation management objectives and Standards for Rangeland Health would not be achieved. AML would not be achieved.

3.4. Riparian/Wetland Areas and Surface Water Quality

Affected Environment
Riparian areas occupy a small but unique position on the landscape in the JMA. Riparian areas are important to water quality, water quantity, and forage. Riparian sites provide habitat needs for many species and support greater numbers and diversity of wildlife than any other habitat type in the western United States. Riparian areas at high elevations support cottonwood and aspen woodlands. Small riparian areas and their associated plant species occur throughout the JMA near seeps, springs, and along perennial drainages. Many of these areas support limited riparian habitat (forage) and water flows. At the present time, wild horse use of the majority of these areas is readily evident, including trampling and trailing and excessive utilization. A decline in the quantity and diversity of stabilizing vegetation along

lotic riparian areas indicates these perennial waterways are at risk of increased bank erosion and sedimentation. The current over population of wild horses is contributing to resource damage and decline in functionality of both lotic and lentic riparian areas (See SI Section 7.0).

Environmental Effects

Proposed Action

To avoid the direct impacts potentially associated with the gather operation, temporary gather sites and holding/processing facilities would not be located within riparian areas. The amount of trampling/trailing would be reduced. Utilization of the available forage within the riparian areas would also be expected to be reduced to within allowable levels. Over the longer-term, continued management of wild horses within the established AML would be expected to result in healthier, more vigorous vegetative communities. Hoof action on the soil around unimproved springs and stream banks would be lessened which should lead to increased stream bank stability and decreased compaction and erosion. Improved vegetation around riparian areas would dissipate stream energy associated with high flows and filter sediment that would result in some associated improvements in water quality. There would also be reduced competition among wildlife, wild horses, and domestic livestock for the available water.

Alternative B

Environmental effects from this alternative would be similar to the Proposed Action. Over the long-term alternative B would be less effective at improving riparian areas than the proposed action and would require more frequent gathers to maintain AML.

No Action Alternative

With the No Action Alternative, wild horse populations would continue to increase within the JMA and to expand beyond the JMA boundaries. Increased horse use within and outside the JMA would present additional adverse impacts to riparian resources and their associated surface waters. Over the longer-term, as native plant health continues to deteriorate and plants are lost, streambank erosion would increase. An opportunity to make progress toward achieving and maintaining riparian areas in properly functioning condition would be foregone as increasing numbers of wild horses continue to trample and degrade other riparian areas, springs and associated water sources. Riparian areas that are currently in a Functional at Risk with a Downward Trend state would be expected to decline to a Non-Functional state over time.

Cumulative Effects

Cumulative Effects of the Proposed Action and Alternative B

Impacts to riparian and surface water within the Little Fish Lake JMA have resulted from past and present actions such as livestock grazing, mining, road construction and maintenance, agriculture, OHV use and recreation, Powerlines and other right-of-way actions, and wild horses. The long-term incremental impact to these resources under these the proposed action and alternative B would be positive as the number of horses are decreased with this gather and over time with subsequent gathers, thus reducing pressure from wild horses on riparian and wetland areas. This would result in improved surface water quality and reestablishment of riparian areas exhibiting increased stability and vigor.

Cumulative Effects of the No Action Alternative

Under the No Action Alternative, no incremental gather-associated impacts would occur to riparian/wetland areas and surface water quality, thus declining conditions would continue as horse populations increase.

3.5. Wildlife, Including Migratory Birds

Affected Environment
The Little Fish Lake JMA provides habitat for many species of wildlife, including large mammals like mule deer, pronghorn antelope and Rocky Mountain elk. Habitat for mule deer occurs throughout the JMA. The majority of the JMA is yearlong pronghorn antelope habitat. The Monitor and Hot Creek Ranges are Rocky Mountain elk habitat.

Predominant habitat types within the JMA which are likely to support migratory birds include: aspen, mountain riparian, mountain shrub, sagebrush, pinyon/juniper, salt desert scrub, playa and cliffs/talus habitat types. There are small inclusions of coniferous forest and mountain mahogany habitat types included in the upper elevations of the Hot Creek and Monitor Ranges.

The migratory bird nesting season is from March 1 through July 31 (including raptors). No surface disturbing activity (staging, trapping, or corrals) can be conducted during this time period without a nesting bird survey of the proposed project area.

Environmental Effects
Proposed Action
Individual animals of all species may be disturbed or displaced during gather operations. Large mammals and some birds may run or fly (flush from the nest) during helicopter operations, but animals should return to normal activities post disturbance. Small mammals, birds, and reptiles would be displaced at staging areas. Overall, there would be no impact to wildlife and migratory bird populations as a result of gather operations.

The use of previously disturbed areas would reduce impacts to migratory birds. Any new staging, corral, and trap sites with vegetation would be surveyed for nesting birds, if gather operations were to occur during the migratory bird breeding season.

Removing wild horses would bring decreased competition between wild horses, wildlife and migratory birds for available forage and water resources as soon as the gather is completed. Over the long-term, both riparian and upland habitat conditions (forage quantity and quality) for wildlife and migratory birds would improve. Soil compaction, spring degradation and stream bank deterioration would be reduced as horse numbers decreased as a result of gather operations.

Alternative B
Environmental effects from this alternative would be similar to the Proposed Action. Over the long term alternative B would be less effective at improving wildlife and migratory bird habitat and would require more frequent gathers to maintain AML.

No Action Alternative
Wildlife would not be disturbed or displaced by gather operations under the no action alternative. However, competition between wildlife and wild horses for forage and water resources would continue and may worsen as wild horse numbers continue to increase above AML. As competition increases, some wildlife species may not be able to compete successfully, potentially leading to increased stress and possible dislocation or death of native wildlife species over the long-term.

Cumulative Effects
Cumulative Effects of the Proposed Action and Alternative B - Impacts to wildlife habitat within the Little Fish Lake JMA have resulted from past and present actions such as livestock grazing, mining, road construction and maintenance, agriculture, OHV use and recreation, Powerlines and other right-of-way

actions, and wild horses. The cumulative impacts from the Proposed Action, in addition to past, present and reasonably foreseeable future actions would be beneficial for all wildlife and their habitat. With a reduction of horse numbers, habitat within the HA and surrounding area would have the opportunity to improve. Impacts to vegetation at riparian areas would be reduced, allowing them to slowly recover with time. Breeding, forage, nesting, and security habitat for all species would improve over time.

Cumulative Effects of the No Action Alternative - The cumulative impacts from the No Action Alternative, in addition to past, present and reasonably foreseeable future actions would result in continual degradation of habitat for all wildlife. Horses would continue to be above AML and compete for resources with other wildlife and livestock. Breeding, foraging, nesting and security habitat for all species would continue to degrade.

3.6. Special Status Plant and Animal Species

Affected Environment

Several Special Status Species may potentially occur within the Little Fish Lake JMA, including several bat, reptile, avian and other special status species.

According to both the 2015 and 2019 Greater sage-grouse Land Use Plan Amendments (LUPA), portions of the Little Fish Lake JMA contains Other Habitat (OHMA), General Habitat (GHMA), and Priority Habitat Management Areas (PHMA); (Figure 3. in SI). Greater sage-grouse use the majority of the Little Fish Lake JMA throughout the year for all of their seasonal habitat needs. These needs include breeding (i.e., strutting grounds or leks), nesting and early brood-rearing, late brood-rearing or summer, winter and crucial winter. Greater sage-grouse require a herbaceous understory of forbs and grass to provide nest concealment, as well as to provide a diet of forbs and insects for the adults and their chicks. Riparian areas are frequently used by greater sage-grouse for late brood-rearing habitat. There are approximately 15 known greater sage-grouse leks within or near the Little Fish Lake JMA. 2020 lek counts throughout the Tonopah Field Office showed a significant decrease in lek attendance. The presence of wild horses is associated with a reduced degree of greater sage-grouse lekking behavior (Muñoz et al. 2020). Moreover, increasing densities of wild horses, measured as a percentage above AML, are associated with decreasing greater sage-grouse population sizes, measured by lek counts (Coates 2020). All required design features found in the Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment will be adhered to.

Areas within the JMA provide aquatic and riparian habitat for one aquatic BLM Sensitive Species, the Little Fish Lake Valley tui chub (*Gila bicolor* ssp. 6). The Little Fish Lake Valley tui chub can found in Fish Springs and Little Fish Lake.

There is potential pygmy rabbit habitat within the JMA. Pygmy rabbits predominately inhabit tall sagebrush with deep friable soils for burrowing.

Occupied year round, desert bighorn sheep can be found in the southern portion of the JMA in the Hot Creek range.

Common special status avian species potentially found within the JMA include Golden eagle (*Aquila chrysaetos*), Ferruginous hawk (*Buteo regalis*), Burrowing owl (*Athene cunicularia*) and Pinyon jay (*Gymnorhinus cyanocephalus*).

There are two BLM sensitive plant species that have been found within or adjacent to the Little Fish Lake JMA. These are the Toquima milkvetch (*Astragalus toquimanus*) and Beatley buckwheat (*Eriogunum beatleyae*).

Environmental Effects

Proposed Action

Individual raptors and birds may be disturbed during helicopter gather operations; however, birds should return to normal activities once operations have ceased. Staging, corral and trapping locations would be surveyed for nests if operations take place during the breeding season, minimizing impacts to avian species. Because gather sites and holding corrals would not be located where sensitive animal and plant species are known to occur, there would be no impact from the placement of facilities. Staging, holding and trap locations would not be placed near any known occurrences of Toquima milkvetch or Beatley buckwheat.

Important habitat used for Greater sage-grouse strutting grounds and pygmy rabbit habitat would not be used for trap sites or staging areas. Additionally, greater sage-grouse timing restrictions identified in the Proposed Action would be applied to minimize impacts to breeding, nesting and brood-rearing birds. Water bait trapping sites that occurred on natural water sources during the late brood-rearing season would be reviewed for use by Greater sage-grouse prior to use as a trapping location to minimize impacts. BLM would coordinate with NDOW if the gather could not meet any of these stipulations. Greater sage-grouse may be disturbed during the winter if gather operations were to occur during that timeframe.

Foreseeable trends from removing wild horses would be decreased competition between wild horses and special status species for available forage and water resources as soon as the gather is completed. Over the long-term, both riparian and upland habitat conditions (forage quantity and quality) for special status species would improve. Impacts from soil compaction spring degradation and stream bank deterioration would decrease as the number of horses decreased under the proposed action.

Alternative B

Environmental effects from this alternative would be similar to the Proposed Action. Over the long term alternative B would be less effective at improving special status species habitat than the proposed action and would require more frequent gathers to maintain AML.

No Action Alternative

Individual animals would not be disturbed or displaced because gather operations would not occur under the No Action Alternative. However, habitat conditions for all special status animal species would continue to deteriorate as wild horse numbers above the established AML further reduce herbaceous vegetative cover and trample riparian areas, springs, and stream banks. Sensitive plant species would be more likely to be grazed and trampled under the no action alternative because there would be more wild horses in the JMA.

Cumulative Effects

Cumulative Effects of the Proposed Action and Alternative B

Impacts to special status species habitat within the Little Fish Lake JMA have resulted from past and present actions such as livestock grazing, mining, road construction and maintenance, agriculture, OHV use and recreation, right-of-way actions, and wild horses. The cumulative impacts from the Proposed Action, in addition to past, present and reasonably foreseeable future actions would be beneficial for all wildlife and their habitat. With a reduction of horse numbers, habitat within the JMA and surrounding area would have the opportunity to improve. Impacts to vegetation at riparian areas would be reduced, allowing them to slowly recover with time. Breeding, forage, nesting, and security habitat for all species would improve over time.

Cumulative Effects of the No Action Alternative
The cumulative impacts from the No Action Alternative, in addition to past, present and reasonably foreseeable future actions would result in continual degradation of habitat for all special status species. Horses would continue to be above AML and compete for resources with other wildlife and livestock. Breeding, foraging, nesting and security habitat for all species would continue to degrade.

3.7. Livestock Grazing

Affected Environment
The Little Fish Lake JMA includes the entirety of the Wagon Johnnie Allotment on BLM-managed lands, and a portion of the Wagon Johnnie Allotment on USFS-managed lands. Permitted livestock grazing use in the JMA is limited to cattle. Livestock grazing is authorized from May 16 to November 15. Livestock grazing also occurs in areas immediately adjacent to the JMA.

Table 3. Little Fish Lake Joint Management Area

Allotment	Season of Use	% of Allotment in HMA	Permitted Use (AUM)	Ten Year Average Billed AUM	Percent Actual Use of Permit
Wagon Johnnie (BLM)	Cattle 5/16 to 11/15	100%	1,216	519*	57%
Wagon Johnnie (USFS)	Cattle 5/1 to 11/15	100%	4,486	4,359*	97%

*Billed AUM may not represent actual use by cattle, but is reflective of grazing strategy in response to available forage

Permitted livestock grazing use in the Wagon Johnnie Allotment has been reduced from historic levels. Actual use during the five year period 1974 to 1979 was reported to average 3,172 AUM for the combined USFS and BLM Wagon Johnnie Allotment (BLM, 1981). Over the past ten years permitted use has decreased from these historical levels, and actual livestock use has generally been less than permitted use for each of the grazing allotments (Table 3). In particular, during the current drought cycle, livestock AUMs were reduced by 50% in 2020 (608 AUMs) and 85% in 2021 (196 AUMs). In 2021, permittees did not turn out livestock in the eastern half to two-thirds of the allotments (which are managed under one four-pasture livestock grazing management plan (AMP), due to chronic excess horse use in those two pastures. The western pastures of the allotment were also stocked lightly and for only short durations. Over the past ten years, reductions have been in part due to persistent drought, competition with wild horses for forage, and the needs of the livestock operations.

The Wagon Johnnie Allotments (both USFS and BLM) continue to be evaluated for achievement of the rangeland health standards, and adjustments to livestock grazing are implemented as appropriate, as grazing term permits are renewed or through annual coordination between the land management agencies and the grazing permit holder. Adjustments can include livestock stocking levels, seasons of use, grazing rotations, utilization standards, and other management practices to better control livestock distribution.

Environmental Effects
Proposed Action
Past experience has shown that wild horse gather operations have few direct impacts to cattle and sheep grazing. Livestock located near gather activities would be temporarily disturbed or displaced by the helicopter and the increased vehicle traffic during the gather operation. Typically, livestock would move back into the area once gather operations cease. Under the Proposed Action, competition between

livestock and wild horses for water and forage resources would be reduced over time. Forage availability and quality would improve over time as the wild horse population is brought to AML. These effects would be extended by population growth control measures. The proposed action would benefit grazing resources by decreasing competition for water and forage and improving the long term health of the range resource.

Alternative B
The environmental effect of Alternative B will be similar to those of the Proposed Action except that gathers would be required more frequently to maintain AML, thus increasing the potential impacts to livestock.

No Action Alternative
Livestock would not be displaced or disturbed as a result of gather operations under the No Action Alternative, however, there would be continued competition with excess numbers of wild horses for limited water and forage resources. As wild horse numbers continue to increase, livestock grazing within the JMA may be further reduced in an effort to slow the deterioration of the range to the greatest extent possible.

Cumulative Effects
Cumulative Effects of the Proposed Action and Alternative B
Impacts to livestock grazing within the Little Fish Lake JMA have resulted from past and present actions such as mining, road construction and maintenance, agriculture, OHV use and recreation, Powerlines and other right-of-way actions, and wild horses. The cumulative effects of the Proposed Action and Alternative B would be similar. Under both alternatives, removal actions would reduce excess pressure from wild horses on the over utilized and shared resources of forage and water. Over time this would likely aid in the achieving of the Standards of Rangeland Health and allow for the perpetuity of livestock grazing. The Proposed Action would have a greater beneficial effect in this regard when compared to Alternative B, as it would also slow the population growth rate of the remaining wild horses within the JMA, thus having a stabilizing effect on resource competition between wild horses and livestock and extending the time it would take for population to meet and exceed AML.

Cumulative Effects of the No Action Alternative
Under the No Action alternative, wild horse populations would continue to increase. This would result in continually increasing competition for available forage and water resources and would lead to increased resource utilization. Where site-specific vegetation management objectives and Standards for Rangeland Health are not being achieved, they would likely continue to not achieve the standard. Where standards are being achieved, it is possible they would change to not achieving the standard. Opportunities to improve rangeland health, by bringing the wild horse population to AML and reducing resource competition and utilization, would be lost.

3.8. Wilderness

Affected Environment
The Little Fish Lake JMA contains a portion of the Antelope Range and Fandango Wilderness Study Areas (WSAs). The Antelope Range Wilderness Study Area encompasses over 87,000 acres of wild and remote country. Diverse topography, vegetation, and wildlife characterize this extensive area. Important archaeological sites can be found within the WSA including Shoshone Indian wickiups and the James Wild Horse Trap, listed on the National Register of Historic Places.

The Fandango WSA is part of a wilderness complex with Morey Peak WSA and the previously mentioned Antelope Range WSA. Riparian vegetation and aspens fill the numerous canyons and draws. The perennial creeks also support brook trout and wildflowers in the spring and early summer.

The National Forest and Public Lands of Nevada Enhancement Act (Public Law 100-790) October 28, 1988 adjusted the administrative boundaries for the Humboldt-Toiyabe National Forest, placing nearly all of the Fandango and Antelope Range WSA within the new Forest Boundary. According to the law however, this WSA must still be managed the same as BLM WSAs.

Environmental Effects

Proposed Action

Per BLM Manual 6330—Management of BLM Wilderness Study Areas, "Helicopters and fixed wing aircraft may be used for aerial surveys and for the gathering of wild horses and burros". Impacts to opportunities for solitude could occur during gather operations due to the possible noise of the helicopter and increased vehicle traffic around the WSA. No surface impacts within the WSA are anticipated to occur during the gather since all gather sites and holding facilities would be placed outside wilderness. Under the Proposed Action, wilderness values would likely see more improvement over time due to the fact that the growth rate would be reduced, thus extending the time between gathers. Any impacts to resources within the WSAs as a result of concentrated use by wild horses would be reduced or eliminated over time as the AML and TNEB is achieved and maintained, further enhancing opportunities for enjoyment of the area by the public.

Alternative B

Environmental effects would be similar to the Proposed Action, but may be less effective at increasing wilderness values long term due to the foreseen need to conduct more frequent gathers as the population continues to increase at a normal rate.

No Action Alternative

No direct impacts to wilderness values would occur. However, impacts to wilderness values of naturalness could be threatened through the continued population growth of wild horses and concentrated use of resources within the WSAs by wild horses. The WSA currently receives slight to moderate use by wild horses during certain times of the year. Increasing wild horse populations would be expected to further degrade the condition of vegetation and soil resources. The sight of heavy horse trails, trampled vegetation and areas of high erosion would continue to detract from the wilderness experience within the WSA. WSA values would decrease over time under this alternative.

Cumulative Effects

Cumulative Effects of the Proposed Action and Alternative B

The cumulative impacts from the Proposed Action and Alternative B would include temporary negative impacts to solitude during operations but would have beneficial impacts to naturalness. These impacts to opportunities for solitude could occur during gather operations due to the possible noise of the helicopter and increased vehicle traffic around the Wilderness/WSA. Those impacts would cease when the gather was completed. No surface impacts within the Wilderness/WSA are anticipated to occur during the gather since all gather sites and holding facilities would be placed outside wilderness. Wilderness values of naturalness after gathers are conducted would be enhanced by a reduction in wild horse numbers as a result of an improved ecological condition of the plant communities and other natural resources. Under the Proposed Action, wilderness values would likely see more improvement over time since growth rates would be reduced under this alternative, thus extending time between gathers. In contrast, enhancement of wilderness values under Alternative B would be shorter-lived, with gathers required more frequently to maintain the wild horse population within AML.

Cumulative Effects of the No Action Alternative
The cumulative impacts from the No Action Alternative, in addition to past, present and reasonably foreseeable future actions would have no temporary negative impacts to solitude during operations but would have negative impacts to naturalness.

3.9. Noxious Weeds and Invasive Non-Native Species

Affected Environment
Noxious and invasive weeds are known to exist on public lands within the administrative boundaries of the JMA. Noxious and invasive weed species are aggressive, typically nonnative, ecologically damaging, undesirable plants, which severely threaten native rangeland, biodiversity, decrease forage quality, wildlife habitat, and ecosystems. Because of their aggressive nature, noxious and invasive weeds can readily spread into established plant communities primarily through ground disturbing activities. In addition, new populations can become established when seeds are transported to new locations via equipment, vehicles, animals, and people. The only Nevada listed noxious weed known to occur within the JMA is hoary cress (*Cardaria draba*), though other species may be present. In particular, saltcedar (*Tamarix ramosissima*) is commonly found along waterways in the broader area and may be present. Other problematic nonnative species found in the JMA include cheatgrass (*Bromus tectorum*), Russian thistle (*Salsola tragus*), saltlover (*Halogeton glomeratus*) and annual mustards (*Brassica spp*.).

These species occur in a variety of habitats including roadside areas, rights-of-way, along waterways, wetland meadows, and undisturbed upland rangelands.

Environmental Effects
Proposed Action
The proposed gather may spread existing noxious and/or invasive species. This could occur if vehicles drive through infestations and spread seed into previously weed-free areas or arrive already carrying seeds attached to the vehicle or equipment. Gather activities could introduce new noxious weed infestations, though the risk can largely be mitigated by following weed best management practices (BMPs). The contractor, together with the contracting officer's representative or project inspector (COR/PI), shall examine proposed gather sites and holding corrals for noxious and invasive weed populations prior to construction. If state-listed noxious weeds are found, the location of the facilities would be moved. Any equipment or vehicles exposed to weed infestations or arriving on site carrying dirt, mud, or plant debris would be cleaned before moving into or within the project area. All gather sites and holding facilities on public lands would be monitored for weeds during the next several years. Despite short-term risks, achieving the established AML and removing excess wild horses offers the best opportunity for improvements in resource health over the long term and the subsequent recovery of the native vegetation resulting in fewer disturbed sites that would be susceptible to invasion by non-native plant species.

Alternative B
The environmental effect of Alternative B will be similar to those of the Proposed Action except that gathers would be required more frequently to maintain AML, thus increasing the potential of spread or introduction of noxious weeds and non-native plant species over the long-term.

No Action Alternative
No impacts from the gather would occur. However, wild horse populations would remain over AML and the impacts to native vegetation from wild horse over-grazing and/or trampling, especially around water sources, would increase dramatically and impacts to the present plant communities could lead to an expansion of noxious weeds and non-native plant species.

Cumulative Effects

Cumulative Effects of the Proposed Action and Alternative B

The cumulative impacts of the proposed gather could increase the existing noxious and invasive weed populations through vehicle traffic, foot traffic, gather sites, camp sites, and temporary holding and processing sites, however through awareness and location scouting the risks of spreading the populations can be reduced. New weed species could be introduced without proper inspection and washing, if necessary, of equipment and vehicles. Best Management Practices should be followed to reduce the risks.

Cumulative Effects of the No Action Alternative

Under the No Action Alternative, the cumulative effects are reduced but still exist. By not gathering to AML the overall rangeland health would decrease thus allowing the opportunity for established noxious and invasive weed populations to expand and establish. Seeds can be carried on the horse's lower legs among their hair and fall off in other locations and establish as seedlings. There is a direct correlation to rangeland health and noxious and invasive weed population percentage.

3.10. Vegetation

Affected Environment

The Little Fish Lake JMA is located within the Central Nevada Basin and Range Major Land Resource Area (MLRA). This area is in the Great Basin Section of the Basin and Range Province of the Intermontane Plateaus. This MLRA supports saltbush-greasewood, big sagebrush, and pinyon-juniper woodland vegetation in the progression from the lowest to the highest elevation and precipitation. Shadscale, in association with bud sagebrush, spiny hopsage, ephedra, winterfat, fourwing saltbush, Indian ricegrass, squirreltail, and galleta, characterizes the saltbush-greasewood type. With an increase in moisture, plants associated with shadscale are replaced by needlegrasses, bluegrasses, bluebunch or beardless wheatgrass, basin wildrye, and forbs. Black greasewood and Nuttall saltbush are important on some sites. Big sagebrush and black sagebrush, which grows on soils that are shallow to an indurated pan or to bedrock, are dominant. In the pinyon-juniper woodland, bitterbrush, serviceberry, and snowberry grow in association with Utah juniper and singleleaf pinyon. The highest elevations support thickets of curl-leaf mountain mahogany and small amounts of mixed conifer forest with limber, or bristlecone pine. On bottom lands, basin wildrye, creeping wildrye, alkali sacaton, wheatgrasses, bluegrasses, sedges, and rushes are typical. Black greasewood, rubber rabbitbrush, and big sagebrush grow on the drier sites. Inland saltgrass, alkali sacaton, black greasewood, rubber rabbitbrush, and big saltbush typify the vegetation on strongly saline-alkali soils (NRCS, 2006).

The Little Fish Lake JMA is dominated by three naturally occurring ecological systems, as defined by the Southwest Regional Gap Analysis Project (SWREGap). Together, the Great Basin xeric mixed sagebrush shrublands, the intermountain basins big sagebrush shrublands, and Great Basin pinyon-juniper woodlands comprise approximately 90% of the total area. Some portions of the JMA have been altered as crested wheatgrass seedings.

Great Basin xeric mixed sagebrush shrublands comprise approximately 33% of the total area and occur on dry flats and plains, alluvial fans, rolling hills, rocky hillslopes, saddles and ridges at elevations between approximately 3,200 and 8,500 feet. Sites are dry, often exposed to desiccating winds, with typically shallow, rocky, non-saline soils. Within the JMA, these shrublands are dominated by black sage (mid and low elevations), low sage (higher elevation) and may be co-dominated by Wyoming big sagebrush or yellow rabbitbrush. Other shrubs that may be present include shadscale saltbush, Nevada ephedra, rubber rabbitbrush, spiny hopsage, Shockley's desert-thorn, budsage, greasewood, and horsebrush. The

herbaceous layer is likely sparse and composed of perennial bunch grasses such as Indian ricegrass, squirreltail, or Sandberg bluegrass (Lowry, et al., 2005).

Intermountain basin big sagebrush shrublands comprise approximately 32% of the area on the broad basin between the mountain ranges, plains, and foothills between approximately 4,900 and 7,500 feet elevation. Soils are typically deep, well-drained and non-saline. These shrublands are dominated by basin big sagebrush and/or Wyoming big sagebrush. Scattered juniper, greasewood, and saltbushes may be present in some stands. Rabbitbrush co-dominates some disturbed stands. Perennial herbaceous components typically contribute less than 25% vegetative cover. Common graminoid species include Indian ricegrass, needleandthread grass, basin wildrye, galleta, or Sandberg bluegrass (Lowry, et al., 2005).

Great Basin pinyon-juniper woodlands comprise approximately 25% of the JMA. This ecological system occurs on the dry mountain ranges and foothills, at elevations ranging from 5,250 to 8,500 feet. These woodlands occur on warm, dry sites on mountain slopes, mesas, plateaus, and ridges. Severe climatic events occurring during the growing season, such as frosts and drought, are thought to limit the distribution of pinyon-juniper woodlands to relatively narrow altitudinal belts on mountainsides. Woodlands dominated by a mix of pinyon and juniper, pure or nearly pure occurrences of pinyon, or woodlands dominated solely by juniper comprise this system. Curl-leaf mountain mahogany is a common associate. Understory layers are variable. Associated species include shrubs such as Greenleaf manzanita, low sage, black sage, big sagebrush, or littleleaf mountain mahogany. Common herbaceous component includes bunch grasses needleandthread and basin wildrye (Lowry, et al., 2005).

In summary, based on available monitoring data an excess number of wild horses in the Little Fish Lake JMA are contributing to the over utilization of key species such as Indian ricegrass, winterfat, and crested wheat grass. Current vegetative conditions in the HMA, such as reduced cover of key grass species and a transition to a less desirable shrub dominated plant community has forced wild horses onto private property inside the JMA. Impacts to private property include damage to fences, water developments, and degradation of private meadows and springs.

Environmental Effects

Proposed Action

The Proposed Action is expected to influence small areas of vegetative resources through trampling by wild horses at gather sites and holding locations and crushing of vegetation by vehicles, at temporary corrals and holding facilities. These disturbed areas would be less than one acre in size. Gather corrals and holding facility locations are usually placed in areas easily accessible to livestock trailers and standard equipment, utilizing roads, gravel pits or other previously disturbed sites and accessible by existing roads. No new roads would be created. These impacts are temporary, and vegetation would likely recover within the next growing season.

Achieving and maintaining the established AML would benefit the vegetation by reducing the grazing pressure on the forage resources. Defoliation that occurs more than once in a growing season reduces a plant's ability to maintain plant health and reproduce (Herbel 2004). The impacts to vegetation by reducing grazing or trampling associated with bringing wild horse numbers to AML would result in maintaining or improving plant health, reproduction, diversity, and composition by allowing the plants to maintain and continue photosynthetic processes to initiate regrowth for recovery and grow adequately for reproduction. Achieving and maintaining the established AML throughout the JMA would be expected to result in upward trends in vegetation health, increased vigor, production and frequency of key forage species, and attainment of Rangeland Health Standards.

Alternative B
The environmental effect of Alternative B will be similar to those of the Proposed Action except that gathers would be required more frequently to maintain AML, increases in AML would also slow upward vegetation trends, and the frequency of potential plant disturbance associated with gather activities would increase.

No Action Alternative
No impacts from the gather would occur. Wild horse populations would continue to exceed AMLs. The impacts to vegetation by grazing or trampling would increase and would result in deterioration in plant health, reproduction, diversity, and composition. By reducing opportunities for photosynthetic processes, the vegetation, particularly desirable forage species, would be susceptible to over-grazing and other stressors, such as drought. This disturbance would ultimately lead to a decrease in desirable forage species and an increase in less desirable species, and an alteration of the overall species composition for the area. Decreased availability and quality of forage resources would negatively impact wild horse body condition scores and health.

Cumulative Effects
Cumulative Effects of the Proposed Action and Alternative B
Impacts to vegetation within the Little Fish Lake JMA have resulted from past and present actions such as livestock grazing, mining, road construction and maintenance, agriculture, OHV use and recreation, Powerlines and other right-of-way actions, and wild horses. The incremental cumulative effects of different population levels and different reproductive rates of wild horse populations over time would have varying effects on the vegetative communities they rely on for forage, the vegetative communities they travel through and seasonally occupy, and the vegetative communities around areas of water. Under the Proposed Action, wild horse populations would be maintained at or near AML for the longest amount of time, compared to the alternatives. This would reduce excess pressure on the over utilized vegetative resources. Over time this would likely improve plant health, reproduction, diversity, and composition. The cumulative effects of Alternative B would be similar to the Proposed Action, but they would not be as long lasting because the growth rate of the remaining wild horse population within the JMA would not be reduced or controlled to the same extent.

Cumulative Effects of the No Action Alternative
Under the no action alternative, wild horse populations would continue to increase leading to greater resource use and consumption. Where site-specific vegetation management objectives and Standards for Rangeland Health are not being achieved, they would likely continue not being achieved. Where standards are being achieved, it is possible they would transition to not being achieved. Opportunities to improve rangeland health and that of the vegetation, by bringing the wild horse population to AML and reducing vegetation utilization and trampling, would be lost.

3.11. Soils/Watersheds

Affected Environment
Soils within the JMA are typical of the Great Basin and vary with elevation. Soils range in depth from very shallow (below 20 inches to bedrock) to deep (greater than 60 inches to bedrock) and are typically gravelly, sandy and/or silt loams. Soils that are located on low hill slopes, upland terraces, and fan piedmont remnants are typically shallow to deep over bedrock or indurated lime hardpan and derived from parent material of volcanic origin. They are highly calcareous and medium textured with gravel. Soils on mountain slopes are also calcareous and range from shallow to deep over limestone. Some of the mountain soils have high rock fragment content, and support pinyon and juniper trees. Mountain soils typically

have gravelly to very gravelly loam textures. Soils on floodplains and fan skirts are deep, have silt textures, and are highly calcareous.

The JMA contains portions of two different 10-digit Hydrologic Unit Code (HUC) watersheds. Both watersheds are located in the Great Basin Region, Central Nevada Desert Basins Subregion, Hot Creek-Railroad Valleys Sub-basin, HUC 16060012. The majority of the JMA is in the Little Fish Lake Valley 10-digit HUC watershed, 1606001202, and a small portion of the northern extent is within the Sevenmile Wash 10-digit HUC watershed, 1606001201 (USGS, 2020).

Environmental Effects

Proposed Action

Project implementation would involve use of existing roads, washes and horse trail areas, and would disturb relatively small areas used for gathering and holding operations. Horses may be concentrated for a limited period of time in traps and at holding corrals. Potential for soil compaction exists but would be minimal and temporary and is not expected to adversely impact soil or hydrologic function. Soils and watersheds would remain at or near the current condition. However, soils and watersheds would likely see more improvement over time with the achievement of AML and reduction of concentrated use of resources by wild horses including trailing and trampling; as well as reduced utilization levels and healthier plant communities. since wild horse population would be gathered in increments and growth rates would be less under this alternative.

Alternative B

The environmental effect of Alternative B will be similar to those of the Proposed Action except that improvements to watersheds and soils over time would be slower as wild horse populations would increase faster without fertility controls. Gathers would also be required more frequently to maintain AML, thus increasing the frequency of plant and soil disturbance associated with gather activities.

No Action Alternative

Soils and watersheds would continue to experience concentrated use by wild horses. As horse populations continue to increase heavy trailing and trampling around water sources and to foraging areas would further increase beyond current levels. Watershed objectives would not be met due to increased horse populations over time.

Cumulative Effects

Cumulative Effects of the Proposed Action and Alternative B

Impacts to soils/watersheds within the JMA have resulted from past and present actions such as grazing, road construction and maintenance, OHV use and recreation, mining and processing activities, aggregate operations, public land management activities, and wildland fire. Direct cumulative impacts from the Proposed Action and Alternative B would include the short-term incremental impact of disturbance and compaction from hoof action around horse corrals. These short-term impacts would be more frequent under Alternative B, as more frequent gathers would be required to maintain the wild horse population within the JMA at AML. However, the long-term incremental impact to soil resources/watersheds would be positive as the number of horses are decreased with this gather and over time with subsequent gathers. This would result in restored soil structure, increased stability, and improved biological function of soils resulting in increased water-holding capacity, reduced erosion and enhanced vegetation community support.

Cumulative Effects of the No Action Alternative - Under the No Action Alternative, no incremental gather-associated impacts would occur to soils/watersheds, thus the declining conditions from compaction, erosion, and consequent poor vegetation support would continue to increase as horse population continues to increase.

4.0 Cumulative Effects

Cumulative impacts are impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. The area of cumulative impact analysis is the Little Fish Lake JMA. (Map 1).

According to the 1994 BLM Guidelines for Assessing and Documenting Cumulative Impacts, the cumulative analysis should be focused on those issues and resource values identified during scoping that are of major importance. Accordingly, the issues of major importance that are analyzed are maintaining rangeland health and achieving and maintaining AMLs.

Past, Present, and Reasonably Foreseeable Actions
The past, present, and reasonably foreseeable future actions applicable to the assessment area are identified as the following:

Project -- Name or Description	Status (x)		
	Past	Present	Future
Issuance of multiple use decisions and grazing permits for ranching operations through the allotment evaluation process and the reassessment of the associated allotments.	x	x	x
Livestock grazing	x	x	x
Wild horse and burro gathers	x	x	x
Mineral exploration / geothermal exploration/abandoned mine land reclamation	x	x	x
Recreation	x	x	x
Range Improvements (including fencing, wells, and water developments)	x	x	x
Wildlife habitat improvements - Pinyon-juniper thinning	x	x	x
Wildlife guzzler construction	x	x	x
Invasive weed inventory/treatments	x	x	x
Wild horse and burro management: issuance of multiple use decisions, AML adjustments and planning	x	x	x

Any future proposed projects within the Little Fish Lake JMA would be analyzed in an appropriate environmental document following site specific planning. Future project planning would also include public involvement.

4.1 Past Actions
In 1971 Congress passed the WFRHBA which placed wild and free-roaming horses and burros, that were not claimed for individual ownership, under the protection of the Secretaries of Interior and Agriculture.

In 1976 FLPMA gave the Secretary the authority to use motorized equipment in the capture of wild free-roaming horses as well as continued authority to inventory the public lands. In 1978, PRIA was passed which amended the WFRHBA to provide additional directives for BLM's management of wild free-roaming horses on public lands.

Past actions include establishment of wild horse HMAs and WHTs, establishment of AML for wild horses, wild horse gathers, vegetation treatment, mineral extraction, oil and gas exploration, livestock grazing and recreational activities throughout the area. Some of these activities have increased infestations of invasive plants, noxious weeds, and pests and their associated treatments.

Little Fish Lake HMA

The Little Fish Lake HMA was designated for the long-term management of wild horses in the Tonopah 1984 MFP; management of this HMA is guided by the 1997 Tonopah ROD and RMP. AML for the Little Fish Lake HMA is 39 wild horses, as established in 1992 through a stipulated agreement (Consent Decision) between BLM, E. Wayne Hage, Colvin and Son Cattle Co., and Russell Ranches through the Department of the Interior Office of Hearings and Appeals, Hearings Division. This AML was subsequently confirmed by the Tonopah Resource Management Plan (RMP) approved October 6, 1997. The Land Use Plan analyzed impacts of management's direction for grazing and wild horses, as updated through Bureau policies, Rangeland Program direction, and Wild Horse Program direction. Forage was allocated within the allotments for livestock, wild horse, and wildlife use and range monitoring studies were initiated to determine if allotment objectives were being achieved, or that progress toward the allotment objectives was being made.

Little Fish Lake WHT

The Little Fish Lake WHT was originally designated as a BLM Herd Area following the passage of the WFRHBA of 1971. Public Law 100-550, the Nevada Enhancement Act, (1988) added approximately 750,000 acres to Forest System Lands in the Toiyabe National Forest from public lands managed by BLM, which resulted in the USFS assuming management responsibility for large portions of the original Little Fish Lake HMA.

The AML for the WHT is 93 and is based off the original BLM AML. The Toiyabe National Forest Land & Management Plan guides the management of wild horse in the WHT. Due to a lack of a natural barrier, horses move between the HMA and WHT regularly.

Little Fish Lake JMA

Integrated wild horse management has occurred in the Little Fish Lake HMA and WHT. Six gathers have been completed in the past on part or all of the HMAs/WHT, and future gathers would be scheduled on a 4- or 5- year gather cycle. Approximately 6,749 wild horses have been removed from the HMAs/WHT in the last 25 years; populations are thriving and have not been negatively impacted.

Adjustments in livestock season of use, livestock numbers, and grazing systems were made through the allotment evaluation/multiple use decision process. In addition, temporary closures to livestock grazing in areas burned by wildfires, or due to extreme drought conditions, were implemented to improve range condition.

The Mojave and Northeastern Great Basin RAC developed standards and guidelines for rangeland health that have been the basis for assessing rangeland health in relation to management of wild horse and livestock grazing within the Battle Mountain Districts. Adjustments in numbers, season of use, grazing season, and allowable use have been based on the evaluation of progress made toward reaching the standards.

Historical mining activities have occurred throughout the area.

4.2 Present Actions

In March of 2021, the Little Fish Lake had an estimated population of at least 291 wild horses. The expected population size in March 2022 is at least 350 wild horses (Table 1). Resource damage is occurring in portions of the JMA due to excess animals. Current BLM policy is to conduct removals targeting portions of the wild horse population based upon age. Further, the BLM's policy is to conduct gathers in order to facilitate a four-year gather cycle and to reduce population growth rates where possible. Program goals have expanded beyond establishing a "*thriving natural ecological balance*" by setting AML for individual herds to now include achieving and maintaining healthy and stable populations and controlling population growth rates. If any alternative other than the No Action is selected, the Humboldt-Toiyabe National Forest would conduct a wild horse gather on their Little Fish Lake Wild Horse Territory concurrently with the BLM.

Though authorized by the WFRHBA, current appropriations and policy prohibit the destruction of healthy animals that are removed or deemed to be excess. Only sick, lame, or dangerous animals can be euthanized, and destruction is no longer used as a population control method. A recent amendment to the WFRHBA allows the sale of excess wild horses that are over 10 years in age or have been offered unsuccessfully for adoption three times. BLM is adding additional long-term grassland pastures in the Midwest and West to care for excess wild horses for which there is no adoption or sale demand.

The BLM and USFS are continuing to administer grazing permits and authorize grazing within the JMA. Within the proposed gather area cattle grazing occurs on a yearly basis. Wildlife use by large ungulates such as elk, deer, and antelope is also currently common in the JMA.

The focus of wild horse management has also expanded to place more emphasis on achieving rangeland health as measured against the RAC Standards. The Mojave-Southern Great Basin and Northeastern Great Basin RAC standards and guidelines for rangeland health are the current basis for assessing rangeland health in relation to management of wild horse and livestock grazing within the Battle Mountain District. Adjustments to numbers, season of use, grazing season, and allowable use are based on evaluating achievement of or making progress toward achieving the standards.

4.3 Reasonably Foreseeable Future Actions

In the future, the BLM would manage wild horses within HMAs that have suitable habitat for an AML range that maintains genetic diversity, age structure, and targeted sex ratios. The BLM Battle Mountain District completed the Tonopah Resource Management Plan in 1997, which analyzed AMLs and addressed wild horse management on a programmatic basis. Future wild horse management in the BLM's Battle Mountain District, as well as the Humboldt-Toiyabe National Forest Austin-Tonopah Ranger District, would focus on an integrated ecosystem approach. The BLM would continue to conduct monitoring to assess progress toward meeting rangeland health standards. Wild horses would continue to be a component of the public lands, managed within a multiple use concept. As the BLM and USFS achieve AML on a national basis, gathers should become more predictable due to facility space. Fertility control should also become more readily available as a management tool, with treatments that last between gather cycles reducing the need to remove as many wild horses and possibly extending the time between gathers. The combination of these factors should result in an increase in stability of gather schedules and longer periods of time between gathers.

The proposed gather area contains a variety of resources and supports a variety of uses. Any alternative course of wild horse management has the opportunity to affect and be affected by other authorized activities ongoing in and adjacent to the area. Future activities which would be expected to contribute to

the cumulative impacts of implementing the Proposed Action could include: future wild horse gathers, continuing livestock grazing in the allotments within the area, mineral exploration, new or continuing infestations of invasive plants, noxious weeds, and pests and their associated treatments, and continued native wildlife populations and recreational activities historically associated with them. The significance of cumulative effects based on past, present, proposed, and reasonably foreseeable future actions are determined based on context and intensity.

4.4 Impacts Conclusion

Past actions regarding the management of wild horses have resulted in the current wild horse population within the Little Fish Lake HMA and Little Fish Lake WHT. Wild horse management has contributed to the present resource condition and wild horse herd structure within the gather area.

The combination of the past, present, and reasonably foreseeable future actions, along with the Proposed Action, should result in more stable and healthier wild horse populations, healthier rangelands (vegetation, riparian areas and wildlife habitat), and fewer multiple-use conflicts within the HMAs and WHT.

Most past and all present and reasonably foreseeable future actions have noxious and invasive weed prevention stipulations and required weed treatment requirements associated with each project. This would minimize the spread of weeds throughout the watershed.

5.0 Mitigation Measures and Suggested Monitoring

Proven mitigation and monitoring are incorporated into the Proposed Action through SOPs, which have been developed over time. These SOPs (SI document sections 5.0 and 6.0) represent the "best methods" for reducing impacts associated with gathering, handling, and transporting wild horses and collecting herd data. Hair follicle samples would be collected to continue to monitor genetic diversity of the wild horses from the Little Fish Lake JMA; additional samples would be collected during future gathers (in 10-15 years) to determine trend. If monitoring indicates that genetic diversity (as measured in terms of observed heterozygosity) is not being adequately maintained, 5-10 young mares from HMAs in similar environments may be added every generation (every 8-10 years) to avoid negative effects of inbreeding depression and to maintain acceptable genetic diversity. Samples may also be collected for genetic ancestry analysis. Ongoing resource monitoring, including climate (weather), and forage utilization, population inventory, and distribution data would continue to be collected.

6.0 Consultation and Coordination

Public hearings are held annually on a state-wide or national basis regarding the use of motorized vehicles, including helicopters and fixed-wing aircraft, in the management of wild horses and burros. During these meetings, the public is given the opportunity to present new information and to voice any concerns regarding the use of the motorized vehicles. The most recent national motorized vehicle use hearing was April 26, 2022. A previous hearing was held in Nevada in 2020. Specific concerns raised included: (1) Ensure humane treatment during gather operations (2) Transparency.

In the 2020 Nevada hearing, most attendees did not support of the use of helicopters for the gathering and removal of excess wild horses. Their comments were entered into the record for that hearing. The BLM reviewed its Standard Operating Procedures in response to these concerns, but determined that no changes

to the SOPs were warranted because the use of helicopters and motorized vehicles has proven to be a safe, effective and practical means for the gather and removal of excess wild horses and burros from the range. Since 2012, Nevada has gathered over 40,000 animals with a total mortality of 1.1% (of which 0.5% was gather related), which is very low when handling wild animals. In accordance with policy outlined in Handbook H-4700-1 and IM 2015-152, BLM does not conduct helicopter removals of wild horses during the peak of foaling, March 1 through June 30, absent emergency conditions.

The Battle Mountain District and Austin – Tonopah Range District consulted and coordinated with Duckwater Shoshone Tribe and Yomba Shoshone Tribe via letter on 5/5/2022, consultation and coordination are ongoing.

The Battle Mountain District BLM coordinated with the NDOW on 12/16/2021. The NDOW was supportive of gather operations within the Little Fish Lake JMA.

7.0 List of Preparers

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8.2 Acronyms

BLM-Bureau of Land Management
BIA- Bureau of Indian Affairs
CFR-Code of Federal Regulations
DR-Decision Record
EA-Environmental Assessment
EIS-Environmental Impact Statement
FLPMA-Federal Land Policy and Management Act
FONSI-Finding of No Significant Impact
HA – Herd Area
HMA – Herd Management Area
ID-Interdisciplinary
IM-Instructional Memorandum
NEPA-National Environmental Policy Act
RFFA- Reasonably Foreseeable Future Actions
RMP-Resource Management Plan
WHT- Wild Horse Territory

Appendix I. Comments and Responses

The Preliminary Little Fish Lake Joint Management Area Wild Horse Gather Plan Draft Environmental Assessment DOI-BLM-NV-B020-2022-0030-EA was made available to the public for a 30-day comment and review period that opened May 11, 2022 and closed June 10, 2022. The EA and Supplemental Information (SI) documents were posted to the project's webpage on the BLM National NEPA Register (Project's NEPA Register website location: https://eplanning.blm.gov/eplanning-ui/project/2019497/510) and announced through press releases. The BLM Tonopah Field Office compiled a project mailing list and distributed an interested public letter regarding the availability of the 30-day public comment for the draft EA. The BLM accepted comments submitted via the e-planning website or email (blm_nv_tfo_littlefishlake@blm.gov), as well as mailed or hand-delivered to the field office. The BLM received 7,124 submissions during the public comment period from 8 organizations and advocacy groups, 2 state and local government agencies, and approximately 7,114 individuals (form letters and individual comments). All comments received prior to the end of the public comment period were reviewed and considered. Substantive comments were used to finalize the EA as appropriate, and revisions are noted in BLM's response below. The names of organizations/advocacy groups and state and local government agencies are fully disclosed.

The table is organized by commenter type as follows:

- Individuals
- Form letter1
- Form letter 2
- State and local government
- Organizations and advocacy groups

No.	Commenter	Comment	BLM Response
		INDIVIDUALS	
1	Paula Saraceno	Look at that picture. How can you even imagine how these horses feel. Do you have a heart at all? You all know it's not about how many horses are on the range. Their numbers mean nothing in comparison to the amount of cattle that are there. And you know it. Just do the right thing for a change and leave this herd alone. God watches and knows all. You are being bad steward of his animals.	Thank you for your comment. The BLM fully recognizes and appreciates the value and importance of the wild horse holds in the American spirit and is committed to managing for healthy horses on healthy rangelands. The BLM manages wild Horses and Burros as directed in the 1971 Wild Free Roaming Horses and Burro Act.
2	Laurel Werner	[1]Reducing the herd to 39 horse on BLM land is not genetically viable. [2]The sterilization of the mares is inhumane. [3]Please consider using PZP on the mares as it's been proven safe, it is not permanent, and is a better plan. It is also much less expensive than round-ups. [4]GonaCon is toxic, is not safe at all, and will permanently result in sterilization of the mares. This will profoundly change herd dynamics and ultimately destroy the herd.	[1] The BLM is not required, nor would it be appropriate, to manage the herds found in any given HMA as if they were genetically isolated populations. A 2013 report from the National Academies of Sciences' National Research Council recommended that BLM consider genetic management of wild horses from the perspective of metapopulations. Under this framework, herds from individual HMAs should not be considered to be genetically isolated populations. Rather, the BLM was encouraged to consider the historical and present connections between HMAs. The Little Fish Lake JMA is part of a large number (nine HMAs and 8 WHTs) of contiguous or adjacent wild horse management areas that span over three million acres, between which a high degree of interchange is expected. Information on genetic monitoring and analysis of the Little Fish Lake herd can be found in section 3.3 of the EA. [2] Sterilization of mares is not included in any alternative being considered. The proposed methods of fertility control in mares (PZP, GonaCon, and IUDs) are considered temporary fertility control measures, meaning that any treated animals are expected to return to fertility after a period of time.

			[3] PZP is included as a tool that can be used in the Proposed Action. Also see Section 2.6 of the EA where fertility control treatment only was an alternative considered but dismissed from further analysis. If herd management were entirely reliant on vaccination with the PZP ZonaStat vaccine, stabilizing wild horse herds would require that nearly all mares (90% or more) be treated every year. In the Little Fish Lake JMA, it is not logistically feasible to dart such a high frequency of mares every year, nor is it realistic to capture 90% of all mares every year to administer a vaccine. The BLM is committed to managing for healthy horses on healthy rangelands, which would be achieved by removing the excess wild horses in combination with fertility controls. [4] A detailed review of published scientific literature on the safety and potential impacts of the prospective use of GonaCon is found in section 2 of the EA and section 8 of the SI document.
3	Joyce Purtzer	The draft EA is based on data and scientific studies which are outdated. The EIS needs to be provided. The fact that there is an overpopulation of wild horses and the setting of the AML is not accurate.	BLM has not identified any significant impacts that would trigger the need for an EIS. The most recent monitoring data shows overgrazing and resource impacts that confirm there are excess animals that need to be removed and that the population needs to be managed within the established AML. Refer to sections 1 and 3 of the EA for data contributing to the determination of there being excess wild horses within the JMA, as well as the photos included on pages 42-55 in the SI document. AML is established in the 1997 Tonopah RMP, the current land use plan for the Tonopah Field Office.
4	Additional comments from Joyce Purtzer	The need for roundup of slaughter is not adequately demonstrated.	No excess horses removed from the range are “slaughtered.” Furthermore, Congress in past years and in the current appropriations language prohibits the use of appropriated funds for the purpose of

			sale without limitation, even though amendments to the WHB Act allow for such sales.
5	Anonymous	[1]SEX RATIO SKEWING The BLM's South Steens Wild Horse Gather EA describes the harm of sex ratio skewing: "Skewing the sex ratio of stallions v. mares would result in a destabilization of the band (stallion, mare and foal) structure moving it from five to six animals to three animals. Social band structure will be lost resulting in combative turmoil as surplus stallions attack a band stallion trying to capture his mare. This could result in the foal being either killed or lost. The mare and foal will not be allowed to feed or water naturally as the stallion tries to keep them away from the bachelor bands of stallions, resulting in stress to the mare during her lactation condition" [2] The impact of such proposed drastic fertility control methods will leave 80-85% of the post-roundup herd infertile. An ever-growing number of horses unable to reproduce will result in forced inbreeding eventually leading to the destruction of the overall health and viability of the herd. [3] According to BLM's equine geneticist Gus Cothran, a herd needs 150-200 wild horses to maintain genetic viability. [4]10-YR PLAN Implementing a 10-year plan eliminates the public's ability to participate in the government's actions and management of these wild horses for an unacceptably long period. To state that the government will continue these actions until 2032 without public input is unacceptable.	[1] Skewing the sex ratio of a herd so that there are more males than females is an established BLM management technique for reducing population growth rates. By reducing the proportion of breeding mares in a population (as a fraction of the total number of animals present), the technique leads to fewer foals being born per adult horse. The BLM Wild Horses and Burros Handbook discusses this method and includes the following text: "The authorized officer should consider alternatives which would manage WH&B herds for a sex ratio with a female component of less than or equal to 50 percent, as this reduces the population growth rate and extends the gather cycle. See Chapter 4 (4.4.1).". It later goes on to acknowledge that impacts to herd dynamics could occur when utilizing this method, particularly when resources are limited and bands are concentrated. However, acknowledging that there may be impacts is not the same as precluding the use of this management tool. The inclusion of this method in the proposed action is intended to provide an additional tool that could be used in reducing the population growth rate and extending time between gathers, the use of which is to be determined by the Authorized Officer. [2] Refer to response to comment #2. [3]Refer to response to comment #2. [4] The proposal for a 10-year gather plan is consistent with other BLM gather decisions in both Nevada and other states.

6	Eileen Hennessy	[1] Decimating this tiny wild horse population to the arbitrarily and unsustainable AML level set by the agency for this unique herd is unacceptable. [2] Instead of managing the Little Fish Lake wild horse herd into oblivion, the BLM must instead raise the AML to a genetically viable population level. [3] The best way to accomplish this is for the agency to use its authority to reduce or eliminate EXCESS, destructive privately owned livestock on our public lands instead of allowing cattle and/or sheep to overrun and degrade the range where they often outnumber wild equines by 100:1 in areas set aside specifically for wild horses and burros. [4] Despite the 1971 Act declaring that wild equines must be managed as the PRINCIPAL users of their own legal areas, the BLM persists in elevating livestock interests at the detriment of a heritage species the agency is mandated to protect and preserve BY LAW. [5] 43 C.F.R. 4710.5(a) gives BLM the authority to reduce or eliminate livestock grazing for the welfare of these iconic animals, "If necessary to provide habitat for wild horses or burros ... or to protect wild horses or burros …". Keep in mind this regulation may be used whenever necessary and is not restricted to merely "emergency" situations. [6] Regarding the Little Fish Lake Herd, the 1997 Tonopah Resource Management Plan (RMP) allocated a mere 28% of the forage for wild horses (468 of 1,687 AUMs); through Adaptive Management, this unfair allocation must be amended to ensure that these wild horses are allocated, at the very least, 51% of AUMs (preferably much more) and livestock the remaining 49% (or less).	[1] See response to comment #3 in regards to how AML was set. See also response to comment #2 regarding management of wild horses as part of meta-populations. [2] Raising the AML was an alternative considered but dismissed from analysis for reasons specified in Section 2.6.6 of the EA. The monitoring information available does not support increasing the AML, but instead indicates there is an overpopulation of wild horses in the HMA and that the excess animals need to be removed so as to bring the population back to within the current AML range. See also response to comment #2 regarding management of wild horses as part of a meta-population, which ensures genetic viability. [3] While the agency has not mandated reduced livestock stocking rates, livestock use has been voluntarily reduced by the permittees over the years. The 10 year billed average for the BLM portion of wagon johnny was 57% actual use, USFS lands 97% use. Livestock can be (and are) managed throughout any given year according to the grazing permit, and to address resource issues where identified (as in this case, where the permittee voluntarily reduced use in response to limited available forage). In the case of Little Fish Lake JMA, livestock are removed from both the BLM and USFS portions of the JMA for approximately 6 months out of the year (mid-November through early May). See section 3.7 and Table 3 of the EA. Wild horse populations in contrast, cannot be managed on the JMA other than through maintaining the population at/ within AML range. Further adjustments to livestock grazing cannot be made through a wild horse gather EA. A land-use

		[7] The Wild Free-Roaming Horses and Burros Act clearly states that wild equines "shall be managed as self-sustaining populations." [8] Moreover, equine genetic expert Gus Cothran, states that wild horse numbers must never be reduced to levels below the minimal population level of 150-200 effective adult breeders of standard reproductive age (not counting foals, yearlings or bachelors) that is necessary for long-term genetic viability and the preservation of healthy, self-sustaining wild horse populations. [9] In fact, the National Academy of Sciences (NAS) found NO OVERPOPULATION of wild equines and the BLM's method of determining population numbers highly suspect and unscientific. [10] The NAS also determined that "preserving natural behaviors is an important criterion" for wild horse management. In contradiction to this warning from NAS, BLM's continues its liberal use of the dangerous pesticide GonaCon, which destroys the natural production of hormones in wild horses thus altering their wild behaviors also violates the Wild Free-Roaming Horses and Burros Act and its legal mandate to preserve the natural behavior of wild equine herds. Data suggests Gonacon breaks down mares' ovaries, potentially acting as a chemical sterilant after as few as two injections. Gonacon has not been proven safe for pregnancies in the first 6 weeks of gestation. [11] Moreover, IUDs and Gonacon are both still experimental in wild horses. The EA fails to address the likely or possible effects of these actions including, the short- and long-term physiological and psychological issues that will or may result. It has been established that Gonacon effectively destroys the ovaries,	plan amendment or revision would be necessary to reallocate use between livestock and wild horses. [4, 5] See section 2.6.5 of the EA where the alternative "Designate the JMA to be Managed Principally for Wild Horse Herds Under 43 C.F.R. 4710.3- 2." was considered but dismissed from detailed analysis. This alternative would not be in conformance with the Tonopah RMP, is contrary to the BLM's multiple - use mission as outlined in the Federal Land Policy and Management Act (1976), and would be inconsistent with the Wild Horse and Burro Act (1971), which directs the Secretary to immediately remove excess wild horses and burros. Furthermore, it was Congress' intent to manage wild horses and burros as one of the many uses of the public lands, not a single use. The Taylor Grazing Act authorizes the use of rangelands for livestock grazing. The BLM is required to manage wild horses and burros in a manner designed to achieve a thriving natural ecological balance and sustainability among wild horse and burro populations, wildlife, domestic livestock, vegetation and other uses. [6] Beyond the voluntary reductions in grazing made, in 2021 the permittee also only utilized 2 of the 4 pastures they were permitted. Despite the absence of livestock use in those pastures, forage continued to be over grazed by wild horses. A land-use plan amendment or revision would be necessary to reallocate forage between livestock and wild horses, therefore this comment is outside the scope of this document. [7] Refer to section 3.3 in the EA. "By maintaining wild horse population size near the AML, there would be a lower density of wild

		thereby shutting down the natural estrus cycle, which is essential to natural wild mare behaviors. Furthermore, there is insufficient data on the effectiveness of IUDs on wild horses how such devices could be implemented humanely. The EA also fails to mention how wild horses would be provided with medical care due to complications, therefore, IUDs must be prohibited for use in wild horses. [12]BLM seeks to artificially skew the natural sex ratio in favor of stallions, which would endanger mares and foals who can be trampled due to aggression of males fighting over fewer females for the right to mate. [13]Sterilizing wild horses and burros negatively impacts the herd's social structure, as well as the public's interest in preserving and observing such natural wild horse instincts and behaviors. Sterilization, either chemical or surgical, must never be considered an acceptable management method for wild horses and burros.	horses across the Little Fish Lake JMA, reducing competition for resources and allowing the wild horses that remain to use their preferred habitat. Maintaining population size near the established AML would be expected to improve forage quantity and quality and promote healthy, self-sustaining populations of wild horses in a TNEB and multiple use relationship on the public lands in the area." [8] see response to public comment #2 regarding genetic viability. [9] Current drought and rangeland conditions show that there are excess wild horses within the Little Fish Lake JMA, rationale of which can be found in EA section 1.1. [10] As stated in section 8 of the SI document: although fertility control treatments may be associated with a number of potential physiological, behavioral, demographic, and genetic effects, those impacts are generally minor and transient, do not prevent overall maintenance of a self-sustaining population, and do not generally outweigh the potential benefits of using contraceptive treatments in situations where it is a management goal to reduce population growth rates (Garrott and Oli 2013). Refer to response to comment #2 regarding GonaCon. [11] Information pertaining to the impacts, safety, and use of GonaCon and IUDs can be found in section 2 of the EA and section 8 of the SI document. [12] refer to response to comment #5 [13] The proposed action does not include sterilization.
7	Maggie Frazier	I oppose the roundup for Little Fish Lake HMA! There is no need to remove wild	Thank you for your comment

		horses from their HMA while continuing to allow cattle grazing in that same HMA! A HERD MANAGEMENT AREA is for WILD HORSES - NOT livestock! Once again, the BLM continues to go its own way & ignore what the public - the OWNERS OF THESE PUBLIC LANDS - is asking!	
8	Dr. Perry Dayton	THANK YOU FOR ALL YOU DO. I fully support any and all round-ups and gathers of wild horses.	Thank you for your comment
9	Maya Spies	Wild horses belong to all of us. They and the areas put aside for them are protected by federal law. It is illegal to deny wild horses the percentage of resources given them by law. Removing wild horses to benefit cattle and sheep grazing, instead, is a gross breach of conduct, unethical and illegal. Wild horses can and must be managed humanely, monitored as individuals within bands, within their HMAs, using PZP-type birth control to intelligently manage population growth. There is no excuse to do otherwise that isn't a complete waste of money, cruel and corrupt.	The BLM is committed to managing for healthy horses on healthy rangelands. The BLM fully recognizes and appreciates the value and importance of the wild horse holds in the American spirit. Refer to response to comment #2 regarding the use of PZP
10	Kathleen Hayden	As long as wild horses are not managed as a protected RESOURCE in the land use planning process Our Heritage Herds continue to be managed for extinction. Clearly this is a violation of the ESA and Sec 106 of the 1966 National Historic Protection Act. By operation of law it is necessary and imperative to include wild equids in an EA, EIS and findings that wild equids are a protected special status native American species RESOURCE The law directs the agency to identify environmental concerns, consider alternatives including no action at all and take a "hard look" at the problem and minimize significant environmental impact. A significant environmental	While the Wild Horse and Burro Act describes wild horses as "living symbols of the historic and pioneer spirit of the West," this does not describe or define them as cultural resources for purposes of NEPA analysis. Wild horses as 'living symbols' do not meet the requirements to be defined as a historic property under NHPA nor as a cultural resource under NEPA. NEPA, and its regulations, do not define cultural resources per se, but require that federal agencies consider the impacts of their actions on all aspects of the "human environment" including human

		impact includes actions that are likely to be highly controversial or have uncertain effects on the quality of our lives and that affect cultural and historical RESOURCES. "NEPA"), 42 U.S.C. §§ 4321, et seq. Wild Equids by operation of law are a special status American species (RESOURCE) under ESA criteria. This factor is vital to the Little Fish Lake 10 year plan. Please provide proof of consultation since fatally flawed RPMs results from the failure to consult with interested parties and/or tribes; (NEPA Cultural Resources) in the planning process. As a RESOURCE, the RMP must provide sufficient habitat in RESOURCE Management Plans, a NEPA requisite. These conditions are in addition to and supersede some of the 1971 Free-Roaming Wild Horse and Burro Act stipulations The ACEC program was conceived in the 1976 Federal Lands Policy and Management Act (FLPMA), which established the first conservation ecology mandate for the BLM. was passed after the Kleppe v New Mexico ruling. Wild Horses and Burros Management Handbook - Bureau of Land Management Under 43 CFR 4700.0-6(b), WH&B shall be considered comparably with other RESOURCE values in the formulation of LUPs. This means WH&B are to be considered in the same manner as other RESOURCE values (e.g., cultural, historic, scenic, rangelands, timber, and minerals). The court in Mt. States v Hodel found that "In structure and purpose, the Wild Free-Roaming Horses and Burros Act is nothing more than a land-use regulation	cultural aspects: human economic, recreational, and other uses of the natural environment; human social institutions; and human-made built environmental resources (i.e., archaeological sites, historic buildings and roads, etc. -- what is generally known as cultural resources). Wild horses are considered a natural aspect of the human environment that may have social value to humans but are not part of the human-made built environment. Therefore, wild horses are not appropriately analyzed as cultural resources in the EA. Refer to response to comment #3 regarding the need for an EIS. The BLM's policy for management of special status species is in BLM Manual Section 6840 (BLM 2008). Wild equids do not meet the criteria of a BLM NV special status species and have no protections under the Endangered Species Act. Comments regarding habitat provisions in the RMP are beyond the scope of this document. The proposed action would positively affect ACECs by reducing damage to cultural resources, upland vegetation, and riparian areas and improve biological integrity by reducing year-round grazing pressure from wild horses. Formulation or modifications of LUPs is beyond the scope of this document. However, management of wild horses as a multiple use of the public lands is already incorporated in the existing land-use plan.

		enacted by Congress to ensure the survival of a particular species of wildlife.”	
11	Sally Gregor	I strongly object to this proposal for the removal of such a large number of horses from this area through current Roundup procedures. I continue to support the the 1971 Wild, Free-Roaming Horses and Burros Act that states that the Little Fish Lake HMA is to be "devoted principally" to the WELFARE of the wild horses and burros that roam freely on our public lands. As a tax paying American I find it an honor to continue with my support of allowing these horses their fair share of these public lands. I have traveled to some of these areas where these magnificent animals live their hardy existence. I'm a former adopted horse owner myself and love horses.	Thank you for your comment, The BLM fully recognizes and appreciates the value and importance of the wild horse holds in the American spirit. Refer to response to comment #6 regarding designation of the JMA to be managed principally for wild horses or burro herds. The Code of Federal Regulations (43 CFR, Subpart 4710.3-2) states: "Herd management areas may also be designated as wild horse or burro ranges to be managed principally, but not necessarily exclusively, for wild horse or burro herds." The "principally but not necessarily exclusively" language applies to specific Wild Horse Ranges, not to HMAs in general. Management actions would still occur under this scenario, as the WFRHBA directs the Secretary to immediately remove excess wild horses and burros.
12	Annie Malone	[1] I oppose the plan to reduce the number of wild horses to AML. Action should be based on facts and documented studies, not assumptions. It is clear that proper studies were not conducted prior to establishing the AML, and therefore, this document is flawed and unreliable. In addition to making the herd genetically unviable, the plan uses more of our public resources for private profit. Publicly funded endeavors should benefit large numbers of people, not a small group of mostly wealthy ranchers or corporations. The majority of citizens want our tax dollars used to protect wild horses and improve their habitat. Wild horses attract visitors and contribute to local economies, benefiting many people. [2] Wild horses are by law an integral part and component of the natural system of	[1] Thank you for your comment. The purpose and need for this action is outlined in section 1.2 of the EA, and documentation of monitoring data and range conditions can be found in section 3 of the EA. Refer to response to comment #3 regarding how AML was set. [2] Please refer to response to comments #6 and #11 regarding designating areas principally for wild horses. Allocation of AUMs is beyond the scope of this EA. [3] Refer to response to comments #2, #5, and #6 regardingGonaCon and sex ratio adjustment, and #27 regarding marking animals treated with fertility control. [4] The comment supporting cameras

		public lands, as expressed by Congress. Since this area is designated principally for horses, they should be considered the principal users of the land. Adjustments should be made to reduce cattle grazing (using BLM reg 43 C.F.R. 4710.5a) and allot the horses their fair share of forage, at least 51% of AUMs. To do otherwise is to violate the intent of Congress. [3] The 1971 Wild Free-Roaming Horses and Burros Act requires that wild horse behaviors are maintained, keeping them wild. Gonacon, surgical sterilization and sex skewing are not appropriate. In addition, sterilization and IUDs are risky and inhumane. Both are in violation of the Comprehensive Animal Welfare Program. No wild horse should ever be branded or marked in any way. [4] The BLM is funded by our tax dollars and should be accountable to us. We are entitled to accountability and transparency. Cameras on roundup helicopters, trap sites and temporary holding pens must be installed NOW! A 10-year plan for the EA eliminates the public's ability to participate in our government's actions and management of these wild horses for an unacceptably long period. To state that the government will continue these actions until 2032 without public input is a violation of our rights.	on aircrafts has been noted. In accordance with WO IM 2013-058: "The public/media are prohibited from riding or placing equipment in the helicopters contracted for a gather. The National Gather Contract §C.9.d specifies that "under no circumstances will the public or any media or media equipment be allowed in or on the gather helicopter while the helicopter is on a gather operation. The placement of public/media cameras or recording equipment on panels, gates and loading equipment including trucks and trailers are also prohibited." The BLM and the helicopter pilot must also comply with 14 CFR Part 91 of the Federal Aviation Regulations, which determines the minimum safe altitudes and distance people must be from the aircraft. Refer to response to comment #5 regarding a 10-year plan
13	Sara Scotti	I want to see commercial livestock reduced in the Little Fish Lake Herd Management Area and use HUMANE management strategies on our wild horses. Wild horses are an American icon and we should not be treating them this way.	Thank you for your comment. The BLM fully recognizes and appreciates the value and importance of the wild horse holds in the American spirit, and is committed to managing for healthy horses on healthy rangelands. Refer to response to comment #6 regarding reducing livestock use in the JMA.
14	Melissa Warfield	I am opposing and expressing my disappointment of the roundup in Nevada's Little Fish Lake Herd. The Bureau of Land Management (BLM) is leaving 132 wild horses on more than	Thank you for your comment. Please refer to response to comments #2 and #6.

		117,000 acres of public land. Please use one treatment of fertility control that is safe - Porcine Zona Pellucida (PZP). The number of 132 wild horses is not genetically sustainable. Please reduce the number of commercial livestock in the Herd Management Area (HMA).	
15	Joanna Riske	The time to reassess the division of public land use is now. The federally protected wild horses deserve their share of land to wander and thrive in. When the AUMs were figured out way back when, a typical cow weighed about 750 lbs. Today their weight reaches upwards to 1,250 lbs. This means more of our public land is being consumed by hungrier, beefier cattle leaving less for the other animals who also rely on that ecosystem for survival. The horse populations can and should be monitored using the already in field tested PZP which does not destroy the wildness in behavior or the ovaries of the mares. Thank you for your consideration on my comments and please do right by these icons of American wildness.	Thank you for your comment. Refer to response to comment #6 regarding changes to AUM allocation, and #2 regarding PZP.
16	Mackenzie Cavener	These horses deserve to run free and live their lives without the fear of helicopters and humans removing their from their homes and ripping their families apart There's better things to be done to control their population, ripping them from their lives and throwing em in auctions just to send to kill pens isnt one of them wild horses have always been a massive staple of the US and taking them away is like taking the bald eagle away , find a different way to deal with them ,they don't destroy things , there aren't too many of them , everyday cause if y'all there is less , they've done nothing to be taken from their homes in the wild If you wouldn't allow the deer population	Thank you for your comment. The BLM fully recognizes and appreciates the value and importance of the wild horse holds in the American spirit and is committed to managing for healthy horses on healthy rangelands.

		to dwindle than horses should be no different Leave them be I have half a mind to go to your auctions take everything single horse and release them back into the wild Figure something else out cause this ain't it.	
17	Williams Cathy	What's going on with you guys. Why are you constantly bothering these poor defensless creators. They live in the wild. There is plenty of room for all of us including the horses. Let them be free. Why do you keep bothering them. I have already written to my representatives and will keep doing so.	Thank you for your comment. The BLM fully recognizes and appreciates the value and importance of the wild horse holds in the American spirit and is committed to managing for healthy horses on healthy rangelands.
18	Sherry Kessel	The Bureau of Land Management's (BLM) and U.S. Forest Service's (USFS) are about to take very cruel measures regarding the proposed Little Fish Lake Joint Management Area (JMA) Wild Horse Gather Plan Draft. Animals are going to suffer and be hurt--perhaps even killed. Obviously, there is no oversight going on and it's being left up to the public to speak out. The agencies need to be responsive to the citizenry and need to follow an appropriate Environmental Assessment plan before proceeding. First. they need to be humane--they need to make use of scientific measures and they need to vaccinate the herds to keep them at sustainable levels. Secondly, they need to stop using IUD's on wild mares--there hasn't been enough research to justify it. Thirdly, stop using an unproven to be safe drug, GonaCon on these horses. The research has been very limited, and its long term effects are in question. The Bureau of Land Management needs to conduct a research study using animal welfare protocols. Additionally, plans to change sex ratios should be dropped. This method has not been scientifically proven to affectively	Thank you for your comment. The BLM is committed to managing for healthy horses on healthy rangelands. The BLM fully recognizes and appreciates the value and importance of the wild horse holds in the American spirit. Refer to response to comments #2 regarding Gonacon and IUD use, and #5 regarding sex ratio adjustment.

		reducing wild horse population growth rates. I find it interesting that the BLM quit using this alternative in other areas for herd management, so why are they not rejecting this when it comes to the Little Fish Lake JMA? The left hand needs to meet the right hand! Thank you for instituting a more reasonable method of managing wild horses. They are sentient beings and deserve to be treated as such.	
19	Donna Gasbarro	I oppose all the roundups in every way shape & form. No need for removing wild horses or burros & no need for birth control. Leave them as they are, government needs to stay out of the round up business & stop allowing ranchers to overtake public lands for their own use.	Thank you for your comment.
20	Sharon Scott	I totally oppose the Little Fish Lake wild horse gathered plan draft by the BLM and U.S. Forest Service.	Thank you for your comment.
21	Jackie Daisa	Please leave the wild horses be. To me there is nothing more cool to see than bands of wild horses running free or just grazing. But I barely ever get to see this sight anymore unless I go looking for them and then it very hard to find them. I would like my grandchildren to be able to see them in their lifetime. This land is not just for the cattle ranchers. It belongs to all the citizens. But the only people who get a say on who gets to flourish on the land is the 1% of the ranchers. Although I love cows they are not a wild animal and our open land should be for our wild animals or at least the ranchers need to share it with our wild animals. But BLM or the forest service are only there to appease the ranchers. You guys don't care what the rest of the people want Leaving 100 wild horses is ridiculous they will just start breeding more quicker to get their numbers back up to a sustaining amount. And to leave the ratio of 60/40 for stallions is stupid.	Thank you for your comment. The BLM fully recognizes and appreciates the value and importance of the wild horse holds in the American spirit and is committed to managing for healthy horses on healthy rangelands. Refer to response to comments #2 regarding IUD use, #5 regarding sex ratio adjustment, and #70 regarding compensatory reproduction.

		Don’t mess with how Mother Nature sets things up. Too many stallions too many fights. Unless that’s your plan so they are continuously fighting and killing each other over females As for the females. You can’t go and stick IUDs in females that you don’t plan to monitor. To easy for infections to occur. Or maybe that’s your plan another way to get more horses off the land I’ve been writing letters to you guys for almost 20 years and not once have you guys ever listened to the citizens. We want our wild horses left wild and free so we can enjoy them. Someone should be on the side of the american citizen for once and what we want Thank you for your consideration,	
22	Pat Doherty	As a long time volunteer for the USFS , I have to tell you im highly embarrassed to be associated with an agency that is supposed to be here to PROTECT NOT DESTROY wildlife . This disgusting ongoing removal of america's wild horses in favor of a handful of cattle ranchers who obviously are telling the govt what to do is incredibly abusive . To not use the pzp dart to control herds which is immensely cheaper instead of terrorizing them , killing them and crowding them in corrals where the do NOT BELONG sickens me . Since when do a few who want horses removed from the PEOPLE'S LAND to be used for their own greedy selves have priority over a mass of americans who do not want this happening . Im ashamed that my friends and relatives are aware that im involved with an agency that acts like it hates wildlife .. STOP THIS ABUSE IMMEDIATELY . The growing hatred for the blm and the forest service needs to end	Thank you for your comment.
23	Linda Wagner	The BLM was allowed ro sidestep preparing the Herd Management Area Plan (HMAP) required by law 43 cFR 4710.4 "The authorized officer shall prepare a herd management area plan, which may cover one or more herd	The Interior Board of Land Appeals has held that an HMAP is not a prerequisite to BLM conducting a gather operation (*Animal Protection Institute of America*, 109 IBLA 112, 127 (1989)), so long as the record

		management areas." BLM says they met and discussed with livestock corporate interests to set the Appropriate Management Level (AML) for these areas. But non-livestock stakeholders were not part of the decision making process. That is what the HMAP does as a foundational planning step . It covers management goals for the wild horses, habitat preservation, forage allotment, AML, range & HMA improvements, water access, fertility control, domestic livestock impact and new science as it becomes available, climate impact and more. All presented with ongoing broad public participation --all stakeholders. The reduction of the AML by 70 percent is extreme and only needed, it seems, by the 1,000 plus domestic cattle BLM sets out in this JMA yearly. Without the HMAP, the taxpayer concerned about the unnecessary AML reduction is cutoff from asking why cattle can"t be removed from this JMA. BLM may legally remove domestic livestock from HMAs see 43 CFR 4710.5. In its 2013 report on the BLM WH& B program, the NAS noted "How Appropriate Management Levels (AMLs) are established, monitored, and adjusted is not transparent to stakeholders, supported by scientific information, or amenable to adaptation with new information and environmental social chsnge." The public should be involved on an open and ongoing basis, not closed out for 10 years. Use of IUDs and GonaCon are not safe for wild mares on the range. Veterinary care will be sporadic, if at all. IUDs can easily become displaced or cause infection in wild mares GonaCon can cause permanent changes in normal behaviors and fertility status. Skewing sex ratios for more stallions than mares results in male aggression, gang rape of mares and injuries to foals. Don't use the wild horses for a hodge-podge of invasive and inhumane experiments. Manage them	otherwise substantiates compliance with the WFRHBA. Based on all available information, BLM has determined under the WFRHBA that excess wild horses are present and that a gather for removal of excess animals and application of population control measures is necessary to achieve a thriving natural ecological balance. AML is not being reduced. Rather, the current population is being brought back to within AML to restore a Thriving Natural Ecological Balance. Refer to response to comments #6 and 40 regarding reduction or elimination of livestock from the JMA. Refer to response to comment #2 regarding how AML was established. Refer to response to comment #2 regarding Gonacon and IUD use, and #5 regarding sex ratio adjustment.

		humanely on-range. "More than 50 % of BLM acres that fail land-health standards identified livestock grazing as the significant cause" (PEER article 'Rangeland Health Means Fixing The BLM Grazing Program') . BLM turns a blind eye to the serious damage caused by domestic livestock, not wild horses and burros, on public lands.	
24	Intermountain Range Consultants on behalf of Colvin & Son, LLC	As an initial matter, I believe that the DEA underestimates the number of wild horses, and therefore the number of excess wild horses in the JMA. I believe, and contend, that the annual rate of increase in the "action area" is 26%. This contention is based upon: (1) data and information in BLM's online wild horse data base that there were 60 head of horses left on the range following the emergency removal of 140 head (and the return of 7 head) in 2015; and (2) the March 2021 aerial horse count, in which 242 head were actually observed. I request that the true annual population rate be recognized in the Final EA. Based upon the data and information presented in the Draft EA, as well as BLM's online wild horse data base, I hereby offer for consideration and adoption a fourth and fifth alternative, i.e., Alternative D and Alternative E. Alternative D SHOULD BE the chosen alternative, or in the event that Alternative D is not chosen, then Alternative E should be chosen. Alternative D is to remove excess wild horses down to 13 head. This number of horses, compounded by 26% annual herd increase, would result in approximately 131 head in Year 10, necessitating another gather in 2033, i.e., Year 11. These numbers assume no net in-migration from the surrounding HMAs, so a similar monitoring plan would have to be employed as is called for in the Draft EA. Alternative D is also in conformance with the Tonopah RMP, because it would	While it is true that the direct count cited in the EA is likely a lower number than what actually exists on the JMA, the BLM cannot assume a higher than average growth rate without documented evidence. Further information and explanation regarding the inventory count and subsequent population estimate calculations can be found in section 1.1 of the EA. The BLM reviewed your proposed alternatives D and E. However, the BLM cannot consider them due to the following factors: 1) both proposed alternatives rely on an assumed growth rate of 26%, which we have no evidence is occurring. Moreover, the documented ongoing drought conditions and range degradation indicate an environment that could not support an above average population growth rate in the JMA. 2) The Tonopah RMP states "When the appropriate management level (or in some cases interim herd size) is exceeded, remove excess wild horses and/or burros to a point which may allow up to three years of population increase before again reaching the appropriate management level or interim herd size". The Proposed Action (Alternative A) allows for an initial gather and follow-up gathers over the 10-year

		"allow up to three years of population growth without exceeding the AML between gathers." In fact, it would allow up to ten years of population growth without exceeding the AML between gathers (assuming no net in-migration). Alternative E is to gather and remove all wild horses that can be found, with no contraceptives applied, and none returned to the rangeland. Alternative A, if carried forward for analysis and consideration, should include BLM scheduling and funding another gather and removal in Year 3 following the present gather. Should monitoring indicate that the wild horses are not closely approaching the AML, then the scheduling and funding will be set for the Fourth Year following the present gather.	period to remove any remaining horses above low AML, to apply fertility controls, and to manage the population at AML over a 10-year period.
25	Intermountain Range Consultants on behalf of Colvin & Son, LLC	The Supplemental Information (SI) attachment, beginning at page 41, through page 55, does a fair job of discussing impacts by the excess wild horses, but does not include information that in 2021, I did not turn my livestock in the eastern half to two-thirds of the allotments (which are managed under one four-pasture livestock grazing management plan (AMP), due to the chronic excess horses using those two pastures. I have also stocked the western pastures lightly and for only short durations, primarily using my private-lands forage (which the SI does correctly note is ALSO being eaten by the excess wild horses. I have suffered a significant amount of harm as a result of chronic, excessive horse numbers, which the EA supplement DOES correctly note is "severe and repeated" utilization of crested wheatgrass and winterfat. The final SI may want to describe that at many Key Areas, the remaining stubble height of the key forage species hovers around one inch as a result of chronic year-round excessive wild horse use. This cannot be meeting sage-grouse nesting requirements.	The EA and SI have been updated to include information about reduced livestock stocking rates.
26	Intermountain	[footnote][4] I do not know why this SI	Thank you for bringing this to our

	Range Consultants on behalf of Colvin & Son, LLC	refers to a different EA number, but it was included in BLM's on-line information pertinent to the present gather, and is titled "20220511_LFL_EA_SI_Document", in pdf format. The DEA is titled "202220511_Draft_EA_LFL_Gather_Plan". DEA page 7 contains conflicting information, in that Table 1 states 251 excess wild horses would be removed (purportedly leaving 99 head), but the narrative at that page states that 189 head would be removed (which would leave 161 head, which is itself over the AML) ...if carried forward for analysis, alternative A should be modified to remove the phrase "depending on BLM national priorities, resources, and off-range corral space availability." Neither the law, nor the BLM RMP provide for this conditional statement. The law, and the RMP, require that BLM keep the wild horses at, or below AML. Likewise, the Forest Plan does not contain such conditioning of the obligation to remove excess wild horses.	attention. The SI has been updated to reflect the correct EA number. The EA has been updated to clarify the number to be gathered and removed in table 1, and the conditional statement "depending on BLM national priorities, resources, and off-range corral space availability." has been removed.
		FORM LETTERS	
27	Form Letter 1 (approx. 1842 received)	[1] Reducing the wild horse population to AML is unacceptable. The minimum number of horses must be at least 150+ to ensure genetic viability. This can be done through BLM reg 43 C.F.R. 4710.5(a) which states livestock can be temporarily or permanently removed, "If necessary to provide habitat for wild horses or burros...or to protect wild horses or burros …" This regulation is always available to the BLM and is not restricted to "emergency" situations. [2] The 1971 Wild, Free-Roaming Horses and Burros Act requires that the Little Fish Lake HMA is to be "devoted principally" to the welfare of wild horses. The 1997 Tonopah Resource Management Plan (RMP) allocated only	[1] refer to response to comments #2 and #6 [2] there is no such requirement- the Code of Federal Regulations (43 CFR, Subpart 4710.3-2) states: "Herd management areas **may** [emphasis added] also be designated as wild horse or burro ranges to be managed principally, but not necessarily exclusively, for wild horse or burro herds." [3] refer to responses to comments #2 and #6 [4] refer to response to comment #6 [5] refer to response to comment #5

		28% of the forage for wild horses (468 of 1,687 AUMs); through Adaptive Management, this must be corrected by allocating wild horses at least 51% of AUMs and livestock the remaining 49%. [3] Prohibit Gonacon and also surgical sterilization, which are shown to destroy natural hormone production. Hormone production is the basis of natural "wild" behaviors and is essential for wild horse society and the well-being of animals who live in extreme conditions. The NAS determined that "preserving natural behaviors is an important criterion" for wild horse management. Use instead humane PZP which does not destroy the ovaries and preserves natural "wild" behaviors. [4] Prohibit the use of IUDs because there is not sufficient data on their efficacy or how they can be implemented humanely. The EA fails to outline how medical care will be administered to wild horses when complications arise. [5] Prohibit sex ratio skewing. An unnaturally high number of stallions on the range increases male-on-male aggression as they compete for females, putting mares and foals in danger. [6] Address public calls for transparency at roundups by having cameras on roundup helicopters, trap sites and temporary holding pens. [7] Prohibit marking or branding of wild horses. It is not appropriate for wildlife management; it is a livestock industry practice. The BLM should be able to easily document 200-300 horses and utilize the online WHIMSweb system to identify individual horses by their markings and track the administration of fertility control. [8] I strongly oppose a 10-year plan for the EA because this eliminates our (the	[6] refer to response to comment #12 [7] BLM requires that any animals treated with fertility control and then returned to the range must be individually identifiable, so that previous treatment history is well documented as associated with that individual. As noted in section 3.3 of the EA and section 8 of the SI document, freezemarking wild horses treated with fertility control will make monitoring and identifying them for retreatment easier. Due to the number of animals present, the relative lack of unique marking or colors as a whole within the HMA, and the widespread animal distribution there will be no other practical way to track animals who are treated. After the transient discomfort noted in Section 8 of the SI document (under header Effects of Marking and Injection), freezemarking a wild horse is not expected to affect its health or social behaviors in any way. [8] refer to response to comment #5

		public's) ability to participate in our government's actions and management of these wild horses for an unacceptably long period. To state that the government will continue these actions until 2032 without public input is a violation of our rights.	
28	Form letter #2 (approx. 5249 received)	I encourage the agencies to consider the following when finalizing the Environmental Assesment and Plan: - Prioritize the use of the scientifically-proven and humane PZP fertility control vaccine, where necessary within the JMA, to stabilize wild herds at sustainable levels. - Eliminate the use of IUDs as more research on the safety of this method for wild and free-roaming mares and their welfare is necessary before this option would be appropriate for broad use as a management tool. - Eliminate the use of GonaCon for wild mares because research on its impacts and long-term effects is limited. More research on GonaCon in wild horses is necessary before this vaccine would be appropriate for broad use as a management tool. If the agencies wish to continue with GonaCon in this JMA, they should do so in the context of a research study and abide by the requisite animal welfare protocols for such a study. - Abandon plans to skew the sex ratios this method is not scientifically supported and not effective in reducing population growth rates in wild horse populations. The BLM has rejected this alternative in herd management plans for other areas, and should do the same in the Little Fish Lake JMA. - Attach a buyout provision allowing livestock permittees to voluntarily retire their grazing permit in exchange for direct or third-party compensation.	Refer to response to comment #2 regarding PZP use and Gonacon safety, #6 regarding the safety of IUDs, and #5 regarding sex ratio adjustment. Including a "buyout provision" would be beyond the scope of this EA.
STATE AND LOCAL AGENGIES			
29	Nevada Department of Wildlife	NDOW fully supports the Proposed Action (Alternative A). We believe the Proposed Action is consistent with the	Thank you for your comment.

	(NDOW)	Wild-Free Roaming Horses and Burros Act of 1971 and necessary to restore and maintain a thriving natural ecological balance.	
30	Eureka County Board of Commissioners	The Eureka County Board of Commissioners express full support for Bureau of Land Management (BLM) and US Forest Service (USFS) jointly reducing wild horse populations in the Little Fish Lake Herd Management Area (HMA) and Wild Horse Territory (WHT) to levels conducive to a thriving natural ecological balance. Relieving the severe overpopulation of wild horses is imperative to improving range conditions and attaining multiple-use objectives. In the absence of active herd management, vegetation communities have been badly damaged, herd health is poor, wildlife habitat has been substantially reduced, livestock operations have suffered major economic losses, and hunting and recreational opportunities have been compromised. We cannot express strongly enough the importance of reaching and maintaining wild horse herd populations at appropriate management levels (AML) over the long-term and keeping horses within the HMA and WHT.	Thank you for your comment.
31	Eureka County Board of Commissioners	Given the budget woes, increasing gaps in time between gathers, and the importance of keeping herds at or below AML, the number of wild horses gathered must be high enough to bring the herd to numbers that will keep within AML for as long as possible. We specifically request that BLM and USFS include a gelding component in the Final EA and Decision Record as retaining all of the available management tools is crucial.	It is anticipated that the fertility control options included in the Proposed Action will have similar or greater effects on reducing the population growth rate as gelding would. Peer-reviewed population modeling indicates that a very high fraction of studs would need to be gelded to cause meaningful reductions in mare fertility rates (Garrott and Siniff. 1992. Journal of Wildlife Management 56:456-464). Gelding was not included in this EA in order to focus management efforts on mares, which has a more immediate effect on reducing population growth rates, and with more widely utilized methods of population control.

32	Eureka County Board of Commissioners	In Section 1.4 of the DEA and Section 1 of the Supplemental Information, there is no description or discussion about the relationship between any of the affected counties plans, policies and controls (nor any State plans, policies, or controls like the State's Sage Grouse Conservation Plan, which has specific policy related to wild horses). This is required by law and regulation. We request that BLM properly coordinate with state and local governments and undergo the required consistency review with the state and county plans, policies, and controls for inclusion in a final EA.	See section discussion of Land Use Plan Conformance and Consistency with Other Authorities, section 1.3 of the EA.
33	Eureka County Board of Commissioners	There is no socioeconomic analysis or discussion in the EA. The rationale (on p. 26) on why socioeconomics was dismissed from detailed analysis is cavalier and inadequate. We ask for socioeconomic impacts related to wild horse overpopulation to not be diminished and be incorporated into the EA.	Costs/Economics are not analyzed in great detail, as the WFRHBA does not authorize a cost-based decision-making process if excess horses are present. "Proper range management dictates removal of horses before the herd size causes damage to the range land (*Animal Protection Inst. Of Am.*, 118 IBLA 63, 75 (Feb. 22, 1991))." BLM has a responsibility per the WFRHBA to remove excess wild burros, ensuring the health of wild burros and the rangeland. In addition, as costs do not respond to the purpose and need (Section 1.2) of the EA they are not carried forward for analysis within the EA. As stated in table 2 of the EA, The Proposed Action would not disproportionately impact social or economic values.
34	Eureka County Board of Commissioners	The DEA dismisses detailed analysis on water and never clarifies how wild horses are or are not accessing water according to Nevada Water Law and how this has bearing on the need for a gather to ensure consistency with State law and BLM regulation and policy. We argue that the horses are, in many cases, using fully appropriated water sources in which there is no appropriated right by BLM. Water rights issues are directly related justifying the need to gather excess horses. Just because water is available for a horse to	Please refer to section 3.4 of the EA that discusses Riparian/Wetland Areas and Surface Water Quality and the effects to that resource from the action alternatives. Bringing the wild horse population to within AML under the Proposed Action or Alternative B will reduce competition between wild horses and other uses (i.e. wildlife, livestock) for water, along with several other benefits over the long-term. As stated in Table 2 in the EA, the proposed

		drink does not mean the use comports with Nevada Water Law or BLM policy. Water considerations alone, which are not even analyzed in detail in the DEA, provide the impetus for BLM to reduce the herd to AML and do a valid assessment on the efficacy of the HMA and WHT providing a TNEB.	action or alternatives would not affect drinking or groundwater quality. The project design would avoid surface water and riparian systems and no water wells would be affected.
ORGANIZATIONS AND ADVOCACY GROUPS			
35	The Cloud Foundation	The "stipulated agreement (Consent Decision) between BLM, E. Wayne Hage, Colvin and Son Cattle Co., and Russell Ranches" must be attached to the final EA.	The consent decision has been included as an appendix in the SI document.
36	The Cloud Foundation	The EA fails to provide the annual actual use grazing (which we request be provided in the final EA). BLM has the actual use data for each of the past 10 years, but omits that from disclosure in the EA. This must be corrected in the final EA. BLM must obtain from USFS all livestock grazing data (permitted, actual use, etc.) and disclose this information in the final EA.	Livestock use data from within the JMA is summarized in section 3.7 of the EA.
37	The Cloud Foundation	…AML for BLM-managed horses should therefore be at least 70 horses and if the Forest Service distribution is approximately the same for wild horses and livestock, FS AML should be corrected to have, at a minimum, 169 wild horses. This would bring the total wild horse AML to at least 239 wild horses.	Beyond the scope of this EA. Refer to response to comments #3 and #6. Based on monitoring data and current over-use of resources, the JMA would not be able to support an increase in AML.
38	The Cloud Foundation	The final EA must disclose the actual use of livestock-grazing AUMs (by allotment) in both the HMA and WHT for each of the past 10 years. The livestock grazing over the past 10 years demonstrates that the agency has determined that TNEB is being achieved when it comes to livestock grazing; yet turns around and claims that TNEB is not being achieved when it	Livestock use data from within the JMA is summarized in section 3.7 of the EA.

		comes to wild horse usage.	
39	The Cloud Foundation	It is legally established that the BLM has no authority to remove horses merely to achieve AML.	The BLM is mandated by statute to manage wild horses in a manner that achieves a TNEB (16 USC 1333(a)). The statute also directs the BLM to "determine whether appropriate management levels should be achieved by the removal or destruction of excess animals, or other options (such as sterilization, or natural controls on population levels)." (16 USC 1333(b)(1)). The WFRHBA (16 USC 1333(b)(2)) further directs the Secretary to immediately remove excess wild horses and burros when necessary to protect range resources. Excess is defined as "wild, free-roaming horses or burros which have been removed or which must be removed from in order to preserve and maintain a thriving natural ecological balance and multiple-use relationship in an area". The BLM has determined that excess horses exist in the JMA, rationale of which is outlined in section 1.1 of the EA. The purpose of achieving AML within the JMA is to remove excess horses and restore a TNEB.
40	The Cloud Foundation	The EA fails to provide any specific information indicating the criteria and science utilized by the BLM to distinguish between the impacts of wild horses and livestock. If TNEB is BLM's objective and if, as the EA states, this range is not meeting rangeland health objectives, then in order for BLM to make a determination of excess wild horses – the agency must provide the data, science and analysis behind its decision to continue (or increase) the "actual use" livestock grazing while TNEB is threatened. The EA fails to provide sufficient data for the removal of wild horses and fails to establish that the removal or reduction of	Refer to response to comment #6 regarding management of public lands for multiple use. Reduction of livestock is beyond the scope of this EA. Refer to response to comment #39 regarding finding of excess wild horses in the JMA. Rangeland monitoring data can be found in section 3 of the EA and section 7 of the SI document.

		livestock would not ensure TNEB, the stated objective. As long as the BLM continues to allow private livestock to graze in the JMA there is no legitimate reason to remove wild horses.	
41	The Cloud Foundation	The EA fails to consider 43 C.F.R. 4710.5; the BLM cannot claim that this statute is "usually applied in cases of emergency and not for general management of wild horses since it cannot be applied in a manner that would be inconsistent with the existing land-use plans." (43 CFR § 4710.1)" (EA page 15)	Beyond the scope of this EA.
42	The Cloud Foundation	The EA must consider and take a hard look at using adaptive management and through the LUP process amending the RMP	Beyond the scope of this EA.
43	The Cloud Foundation	FLPMA requires that BLM "balance" wild horse and burro use with other uses which equates at minimum to a 50-50 allocation of available forage between horses and livestock in the JMA. The EA fails to address this. By allowing livestock to continue to graze and instead of reducing or eliminating livestock, which is far more pervasive across BLM-managed public lands, the agency has instead chosen to target wild horses for elimination and removal on the meager 11% of public lands authorized for their use and as their habitat While commercial livestock grazing is permitted on public lands it is not a requirement under the agency's multiple use mandate as outlined in the Federal Land Policy and Management Act of 1976 (FLPMA). Indeed, public land grazing is a privilege and not a right, and the BLM is mandated by law to protect wild horses and burros.	Refer to response to comment #6 regarding reductions to livestock grazing. See section 2.6.5 of the EA where the alternative "Designate the JMA to be Managed Principally for Wild Horse Herds Under 43 C.F.R. 4710.3- 2." was considered but dismissed from detailed analysis. This alternative would not be in conformance with the Tonopah RMP and is contrary to the BLM's multiple -use mission as outlined in the Federal Land Policy and Management Act (1976)
44	The Cloud Foundation	**Comments regarding 1982 NAS report.** The choice of control strategies, when and if they become necessary, must also be responsive to public attitudes and preferences and cannot be based solely on biological or cost consideration. The issue of excess numbers is conceptually severable from the strategies questions.	In determining which issues must be addressed in an environmental analysis, the CEQ Regulations state that NEPA documents "… must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail" (40 CFR 1500.1(b)).

		However, an otherwise satisfactory population level may be controversial or unacceptable if the strategy for achieving it is not appropriately responsive to public attitudes and values." p1219 "Biologically, the area may be able to support 500 cattle and 500 horses and may be carrying them. But if the weight of public opinion calls for 1,000 horses, the area can be said in this context to have an excess of 500 cattle. For these reasons, the term excess has both biological and social components. In the above example, biological excess constitutes any number of animals, regardless of which class above 1,000. Social excess depends on management policies, legal issues, and prevailing public preference..." p1193 The EA fails to consider the interests of those who cherish the opportunity to observe, photograph, and otherwise enjoy wild horses and their natural behaviors … these are the very horses which Congress declared to be "national esthetic treasure[s]" when it enacted the Wild Free-Roaming Horses and Burros Act of 1971	While many issues may arise during scoping, not all of the issues raised warrant analysis in the EA. Issues were analyzed if: 1) an analysis of the issue is necessary to make a reasoned choice between alternatives, or 2) if the issue is associated with a significant direct, indirect, or cumulative impact, or where analysis is necessary to determine the significance of the impacts. Wild horses and burros have long been managed by the BLM, and the EA does not propose to change the public viewing or study of wild horses and burros in the Little Fish Lake JMA. The BLM encourages the viewing and enjoyment of America's wild horses and burros and notes in the EA that wild horse and burro viewing is a recreational activity in the Little Fish Lake JMA. The proposed action would bring the populations of wild horses to within the established AML; the BLM would not remove all horses or burros from the HMA. For this reason, the opportunities for wild horse viewing would continue.
45	The Cloud Foundation	(VII.) Preserving and Protecting Natural Behaviors. "Original, natural condition" implies unaltered by sterilization or fertility control that would change the animals' natural, wild behaviors. These wild behaviors are the basis for the rich and complex natural social structure of wild horses. Without them, the BLM would just be managing "free-roaming" horses. Free-roaming simply means the animals are free to move about at will, and could include castrated or sterilized domestic horses. The fact that Congress titled the Act with both words, "Wild" and "Free-Roaming" is a clear indication that they are separate but equally important concepts, and the BLM must treat them as such.	Comments noted. Please refer to responses to comments #2 and #6. Although castration or sterilization is not included in the proposed action, in the WFRHBA, the U.S. Congress has specifically directed the BLM and USFS to consider the use of sterilization as a part of wild horse and burro management (§1333(b)(1)).
46	The Cloud	(VII.A.) EA Fails to Take a Hard Look at Gonacon	A review of scientific literature regarding GonaCon and the safety of

	Foundation		this fertility control measure is included in sections 2.2.2.2 in the EA and Section 8 in the SI.
47	The Cloud Foundation	(VII.B.) Intrauterine Devices (IUDs)	A review of scientific literature regarding the safety of this fertility control measure is included in sections 2.2.2.3 in the EA and Section 8 in the SI.
48	The Cloud Foundation	(VII.C) EA Fails to Take a Hard Look at Altering the Natural Sex Ratio	Altering sex ratio is discussed in section 2.2.2 of the EA and section 8 of the supplemental information.
49	The Cloud Foundation	The EA fails to adequately analyze the current "Allowable" Management Level (AML)…The BLM and USFS must increase AML for the JMA	Changes to AML are beyond the scope of this document. Monitoring data indicates overgrazing and resource impacts directly attributable to wild horses, which does not support an increase in AML, but instead indicates the need to remove excess animals from the range. If in the future the data indicates that the wild horse overgrazing and impacts are not occurring and there is additional forage available for wild horses, then a decision-making process to increase in AML could be contemplated.
50	The Cloud Foundation	Alternative 3 outlines only utilization of fertility control to bring down the population. We support this Alternative with the modification that only PZP fertility control is utilized (to preserve natural "wild" behaviors and ensure reversibility for a prolonged number of years) and that low AML is increased to 150-200 animals for the JMA. The EA must consider implementing a rigorous PZP program, without removals, to humanely manage wild horses in this Congressionally-designated wild horse habitat.	Utilization of fertility control only was considered but eliminated from further consideration in this EA. Refer to section 2.6 of the EA and response to comment #2, above. Changes to AML are beyond the scope of this document.
51	The Cloud Foundation	The EA fails to provide hard data that shows there is a need to remove "excess" horses that cannot be fulfilled by reducing	See response to comment #39. Population count is included in Table 1 in the EA which shows population

		or eliminating livestock grazing	above AML, monitoring data is included in section 3.3, evidence of excess horse-related impacts and conflicts with multiple use is the provided SI document pages 44-55.
52	The Cloud Foundation	Despite the range conditions cited in the EA, the BLM is maintaining the current permitted livestock grazing levels. On one hand the BLM claims that removing horses is needed because the range is suffering due to horses and that if the removal doesn't take place the environment will suffer. Yet, on the other hand, BLM continues livestock grazing in the area and claims that does not have a negative impact on the range and endangered species and, accordingly, BLM land health assessments do not indicate a need to reduce livestock. The final EA must include as attachments the latest livestock rangeland health assessments and indicate when the grazing permits were renewed. Clearly the understatement of forage consumption by livestock and the resulting overstocking of allotments causes livestock damage to the range further demonstrating that the EA fails to provide adequate data to support that rangeland damage is being caused by wild horses	The BLM has not reduced permitted livestock grazing use. However, within the BLM portion of the Wagon Johnnie allotment several voluntary reductions have occurred. In 2022 a 78% reduction occurred, 2021 85% reductions occurred and 2020 50% reductions. As such, permittees are managing livestock to reduce or prevent livestock grazing impacts, while addressing wild horse impacts to the range requires the BLM to conduct removal of excess animals. Livestock grazing is discussed in further detail in section 3.7. Refer to response to comment #6 regarding livestock grazing and multiple use.
53	The Cloud Foundation	The EA fails to consider the modern understanding of the important role that wild horses play as a flagship species. They are described as "ecosystem engineers," as they provide hydration for dozens of animal species, from badgers to elf owls to toads in desert environments including Lake Mead as outlined in Science magazine	The article referenced here states that "Equid well digging was limited by water-table depth, with equids unlikely to dig deeper than 2m… Well digging was also constrained by substrate, primarily occurring in flood-disturbed systems of loose sand and gravel". The environmental conditions present within the JMA are not conducive to equid well-digging, therefore it is unlikely that wild horses fulfill the suggested ecological role in this JMA. Alternately, if wild horses do dig holes that provide water access in this JMA, that role would likely still continue if wild horse population size

			is within AML. As BLM's literature review also indicates (Refer to section 8 of the SI document as well as new text added in Appendix II), although wild horses and burros can have some ecologically beneficial effects, those beneficial effects are outweighed by the ecological damage that they cause at high densities (when over AML).
54	The Cloud Foundation	Given the highly questionable short- and long-term conditions and impacts that will likely result from the actions outlined in the EA, a 10-year Decision Record (DR) is against the best interests of the public and the wild horses the agency is required to protect. NEPA requires that the BLM conduct further environmental analysis and public comment for future wild horse roundups and management actions, and cannot rely on an outdated,10-year-old EA.	There are no "highly questionable short-term and long-term conditions and impacts" likely to result from the proposed action. A 10-year time frame is necessary to allow for the range of management actions necessary to achieve a TNEB, including removing excess animals to low AML, gathers to apply fertility controls to reduce the population growth rate, and to ensure the population remains within AML for a sufficient period of time to allow for degraded resources to recover. The NEPA analysis takes the required hard look at the impacts of the management actions proposed to be conducted over the 10-year period to remove excess animals, manage for a TNEB, and allow for resource recovery.
55	The Cloud Foundation	The EA fails to adequately address the protection of wild horses during the proposed roundup. The BLM's "Comprehensive Animal Welfare Program (CAWP)" is woefully inadequate in establishing humane standards for the treatment of wild horses and burros during a roundup. It must go further in its protection of these animals.	The BLM is committed to the humane handling of wild horses and burros. The BLM implements the most effective and humane methods in order to reduce stress and injury to wild horses and follows the Comprehensive Animal Welfare Program (CAWP) which provides standards for humane treatment of wild horses and burros for all gather operations, including use of helicopters.

56	The Cloud Foundation	EA Fails to Consider Alternatives to Address Transparency During Implementation of the Proposed Action	Refer to response to comment #12. The BLM supports meaningful observation of gather operations and follows current policy and guidelines pertaining to public observation of gathers (BLM IM No. 2013-058). Public viewing opportunities are addressed in section 2.4.9 of the EA.
57	The Cloud Foundation	BLM Must Install Cameras on Helicopters, at Trap Sites and Temporary Holding Pens to Provide Meaningful Public Observation in Compliance with First Amendment Rights The EA fails to provide for meaningful public observation of government activities at wild horse/burro roundups. The current level of public observation provided by the BLM is insufficient under the First Amendment.	Refer to response to comment #12 and #56. The BLM supports meaningful observation of gather operations and follows current policy and guidelines pertaining to public observation of gathers (BLM IM No. 2013-058). Public viewing opportunities are addressed in section 2.4.9 of the EA.
58	The Cloud Foundation	XVI. The EA fails to give a hard look at a reasonable alternative that: • reduces livestock grazing • increases AML for wild horses • utilizes only the well-established PZP fertility control for population growth suppression	Reductions to livestock grazing are beyond the scope of this EA. However, livestock grazing has been voluntarily reduced by permittees over the last few years. Increasing AML is outside the scope of this document and is not supported by the available data.
59	The Cloud Foundation	As stated by the NAS, NRC and CEQ the BLM must consider the prevailing public preference	The BLM considers all public comments submitted and this EA has been revised to reflect several received comments where specific data or information was provided to assist the BLM in refining its EA analysis.

60	Return to Freedom Wild Horse Conservation, Humane Society of the United States, and Humane Society Legislative Fund	The wild horse gather plan would allow for an initial gather and follow-up in order to achieve and maintain Appropriate Management Levels (AMLs) and would continue fertility control management. Combined AML for the two areas is 132 horses. Currently, 250 horses are estimated in the two areas, and they move back and forth between the areas.	Current population estimates put the population at 350 horses within the JMA, nearly double established AML.
61	Return to Freedom Wild Horse Conservation, Humane Society of the United States, and Humane Society Legislative Fund	**Comments to Background 1.1** "…the BLM has determined that at least 189 excess wild horses above the low end of AML exist within the Little Fish Lake JMA. These excess wild horses need to be removed in order to achieve the established AML…" (EA, p. 7) (1) We assume AML was determined based on BLM's handbook (USDI Bureau of Land Management 2010), which presumes gather-removal management scenarios only. If fertility control is some portion of a modern management plan, AML can be brought into context: a decreased population growth rate translates to both longer times between gathers and fewer horses needing to be gathered if the growth rate is reduced. This is not a recommendation to re-evaluate AML in general, because that is outside of the scope of this EA. However, because low AML is necessary in gather-only management scenarios (so that there is sufficient time until numbers above high AML are reached, triggering a gather), it is reasonable to adjust the expectation that reaching low AML is necessary; (2) programmatically, immediate achievement of AML across BLM HMAs is not possible. It would behoove the Agency to plan for many levels of slowed, longer-term management objectives: instead of immediate reductions to low AML, taking into consideration the fact that NEPA actions must be put into place to facilitate	The EA has been updated to clarify numbers in table 1. The 2022 population estimate is 350 animals. Comment noted. See response to comment #6 regarding the setting of AML. The RMP objectives state "to manage wild horse and/or burro populations within Herd Management Areas at levels which will preserve and maintain a thriving natural ecological balance consistent with other multiple-use objectives" and "to manage wild horses and/or burros at appropriate management levels (AML) or interim herd size (IHS) for each HMA". One of the expected impacts of adopting the proposed action (Alternative A), utilizing both removals and application of fertility control measures, is that the time between subsequent gathers will be increased, and fewer horses will need to be removed over a longer period of time.

		an increase in short- and long-term holding facilities; analysis of whether a combination of slower removals in these HMAs paired with fertility control to slow reproduction could reduce impacts to already full holding facilities (fewer horses removed over a longer period of time); and, indeed, if horses might be allowed to stay on HMAs (at reduced numbers, but not at AML) because the program as a whole is greatly impacted at this time. This would be prudent for both the American tax payer and the horses.	
62	Return to Freedom Wild Horse Conservation, Humane Society of the United States, and Humane Society Legislative Fund	**Comments to 2.2 Alternative A: Proposed Action Alternative and 2.2.1 Population Management** We appreciate the recognition that AML may not be immediately achieved. This should not preclude the BLM from utilizing fertility control... Diverse stakeholder groups have arrived at similar conclusions via modeling and peer-review research analysis: a slower and multi-faceted approach to wild horse and burro management must include some removals, some on-range fertility control (via remote darting), and/or some gather-administer-release fertility control (fertility control administered to an appropriate proportion of females in a livestock chute, ideally followed by holding for a booster, and then released). We do not advise sex-ratio skewing for wild horses for these reasons: (1) management of populations via sex skewing is temporary (populations return to their normal ratios), and (2) healthy populations rely on whatever the norms are in terms of that population's demographics – adjusting a population of wild horses to skew for more or less of anything does not attain a natural state for that population, with behavior ramifications that are not yet understood. "Population inventories and routine resource/habitat monitoring would continue to be completed every two to three years to document current	Thank you for your comment. Refer to response to comment #5 regarding sex ratio adjustment. Increasing AML is beyond the scope of this EA.

		population levels, growth rates, and areas of continued resource concerns (horse concentrations, riparian impacts, over-utilization, etc.)." (EA, p. 12) We appreciate the discussion in this EA as to how the BLM will use monitoring and adaptive management strategies to be better able to flex to conditions on the range as they change. This is very positive as it means a more dynamic management, shifting as ecosystems do, responding to stressors, and making decisions based on the environment and the land. Wild horse advocacy organizations, our own included, would like AMLs to trend towards generally higher AMLs where appropriate. We are aware that conditions on the range must support this, and that to improve conditions on ranges in the west that are dry and becoming drier, many compromises, across many of the multiple-uses, will become necessary. Ultimately, of course, the ability to increase AML is tied directly to range condition, as well as ecosystem resistance and resiliency.	
63	Return to Freedom Wild Horse Conservation, Humane Society of the United States, and Humane Society Legislative Fund	For these reasons, we strongly recommend that the FS and BLM focus primarily on the use of water and bait trapping for gathering wild horses and burros... Though it is outside of the scope of this EA, we would like it stated that, when other options exist, we are opposed to the use of helicopters during roundups for the following reasons: (1) Though standard operating procedures (SOPs) for gathering animals with the use of helicopters have been established, there are numerous instances where those SOPs are not followed, with little to no consequence to the BLM district offices or the contractor (more on this, below); (2) Horses are extremely stressed and fearful during helicopter round ups; and (3) Mares and foals are easily separated during the fast-paced helicopter roundups. If helicopters must be used, the BLM should also restrict the use of helicopter-	As stated in the EA section 2.4.1 the BLM will follow the Comprehensive Animal Welfare Program (CAWP) for all gather operations, including use of helicopters. See section 5 for gather operation SOPs. These Standard Operating Procedures were reviewed in response to comments with concerns regarding BLM's use of helicopters as a gather method, and no changes to the procedures were indicated based on this review. While the primary gather (capture) method would be the helicopter drive method with occasional helicopter assisted roping (from horseback), the BLM may also use bait and water trapping to capture animals for removal or for fertility control treatment, as stated in EA Section 2.2.1. Both of these methods have very low acute mortality rates,

		drive gathers to situations where water or bait trapping is not possible, and only conduct helicopter drive gathers in the winter and spring months when temperatures are cooler, wild horses and burros are less susceptible to heat stress and dust exposure, and maximum effectiveness for fertility control vaccine application in equines can be achieved. When helicopters are used, careful adherence to Comprehensive Animal Welfare Protocol (CAWP), and appropriate BLM oversight of contractors, is essential. While the agency maintains that CAWP is always followed, repeated incidences of SOPs not properly being followed are documented by wild horse advocacy groups. It is important that BLM take complaints and perceptions of CAWP not being properly followed seriously. Contracting Officer Representatives must maintain rigorous standards for contractors and BLM staff during gather operations. Strict following of CAWP and zero tolerance for practices or incidences that fall outside of CAWP will go a long way towards beginning the slow process of re-establishing trust between agencies, contractors, and stakeholders.	compared to what is commonly observed in other large animal capture operations; the mortality rate was actually lower for helicopter drive trapping operations than for bait-water trapping (Scasta. 2020. Journal of Equine Veterinary Science 86: 102893.). The BLM does recognize benefits to bait and water trapping in circumstances where such trapping would be appropriate and effective as part of the proposed action alternative. However, it would not be possible to achieve the purpose and need by relying on the use of large bait and water traps alone due to the vast HMA, topographic features, and access limitations. Bait and water trapping may be helpful in smaller, site-specific areas within the HMA to assist gather operations as a whole in combination with the effectiveness of helicopter use.
64	Return to Freedom Wild Horse Conservation, Humane Society of the United States, and Humane Society Legislative Fund	**Comments to 2.2.2. Population Growth Suppression Methods** "GonaCon-Equine has been used on feral horses in Theodore Roosevelt National Park (Baker et al. 2018) and over the past xx years, has also been applied to an increasing number of BLM-managed wild horses in over xx HMAs…" (EA, p. 14) This appears to be a typo. Can the BLM please confirm how often and in how many HMAs (and how many wild horses) have received GonaCon, as well as the outcomes of application in HMAs (as opposed to controlled, pen or corral situations)?	Thank you for bringing this to our attention, the EA has been updated to correct this typo. GonaCon-Equine has been used on feral horses in Theodore Roosevelt National Park (Baker et al. 2018) and over the past 5 years, has also been applied to an increasing number of BLM-managed wild horses in over 15 HMAs throughout the west (EA, page 14). More detailed analysis regarding effects of GonaCon application can be found in section 8 of the SI document.
65	American Wild Horse Campaign	The BLM/USFS must pursue a proposed action that includes: 1. Prioritizing the use of the scientifically-proven and humane	See section 2.6.1 of the EA regarding field darting horses with PZP only, as well as response to comment #2. A

	(AWHC)	PZP fertility control vaccine delivered via field darting to stabilize wild herds at sustainable levels; 2. Eliminating the use of IUDs as more research on the safety of this method for wild and free-roaming mares and their welfare is necessary before this option would be appropriate for broad use as a management tool; 3. Eliminating the use of GonaCon for wild mares because research on its impacts and long-term effects is limited. More research on GonaCon in wild horses is necessary before this vaccine would be appropriate for broad use as a management tool. If the agencies wish to continue with GonaCon in this JMA, they should do so in the context of a research study and abide by the requisite animal welfare protocols for such a study; 4. Managing for natural sex ratios of 50/50 (stallions:mares); 5. Attaching a buyout provision allowing livestock permittees to voluntarily retire their grazing permit in exchange for direct or third-party compensation.	detailed review of published scientific literature on the safety and potential impacts of the prospective use of GonaCon and IUDs can be found in sections 2.2.2.2 and 2.2.2.3 of the EA, respectively, as well as in section 8 of the SI document. The review of peer-reviewed scientific literature in the EA and SI allows for valid inference about the range of effects for the fertility control methods considered. Attaching a buyout provision is beyond the scope of this document.
66	American Wild Horse Campaign (AWHC)	The BLM has yet to conduct a research project on wild horses in order to study and determine what impacts IUDs will have on wild horse health and behavior. In the LFL JMA, the agency cannot gather scientific information on these untested methods in the absence of an affiliation with an academic institution, a scientifically sound and approved research protocol, and approval from an Institutional Animal Care and Use Committee ("IACUC"). Additionally, the BLM must disclose and identify any IACUC it works with in the LFL JMA. The IACUC must also ensure the "proper use of animals, including the avoidance or minimization of discomfort, distress, and pain when consistent with sound scientific practices." Because the EA proposes to implement IUDs even though the management method has not yet been studied in wild horses, there is a strong likelihood that an IACUC could impose changes to the proposed action. In fact,	Refer to response to comment #6 regarding IUDs. Standard Operating Procedures (SOPs) for implementation of IUDs are included in section 10 of the provided SI document. The BLM requires institutions such as universities to have IACUC oversight for any research activities involving wild horses and burros, but no such research project is being proposed as part of this decision. The BLM is not required by law or policy to engage in IACUC oversight of its management activities. The review of peer-reviewed scientific literature in the EA allows for valid inference about the range of effects for the fertility control methods considered.

		the EA is absent of any real detail or explicit protocols for implementation of the IUDs in wild mares.	
67	American Wild Horse Campaign (AWHC)	AWHC asks that the establishing a 60/40 male-to-female sex ratio as part of the management plan for the LFL JMA be eliminated from the proposed action. Skewing of sex ratios is not reasonable especially if mares will receive fertility control.	Refer to response to comment #5 regarding sex ratio adjustment.
68	American Wild Horse Campaign (AWHC)	**Comments related to helicopter use** The EA must analyze the impacts that helicopter roundups have on wild horses including the stress, trauma, injury, and death caused to wild horses and collateral damage to sensitive sagebrush, grasslands, and riparian habitat areas and disruption to other wildlife species. If the BLM/USFS move forward with the use of helicopters to roundup horses, the current BLM Standard Operating Procedures for "Gathers" is insufficient, and the EA must analyze existing information available to determine improvements that should be made to reduce potential stress and harm to the horses during the roundup.	See Response to Comment # 63
69	American Wild Horse Campaign (AWHC)	In the wake of 145 deaths at the Cañon City Off-Range Corrals in Colorado from Equine Influenza Virus and the massive outbreak of strangles at the Wheatland Off-Range Corrals in Wyoming that forced its closure, the BLM/USF must reconsider the removal and placement of even more wild horses at BLM holding facilities. Of note, internal assessments, performed to ensure compliance with the BLM's Comprehensive Animal Welfare Program (CAWP), demonstrate that improper care of these animals extends well beyond Cañon City and Wheatland. Problems documented at multiple holding facilities include understaffing, lack of timely vaccination of captured horses brought into confinement, inaccurate and inadequate recordkeeping, inadequate access to hay and water for all horses, and	Assessments of BLM off range holding facilities is beyond the scope of this EA.

		issues related to construction and maintenance. Until the BLM has completed assessments at all 28 of its off-range holding facilities and come into compliance with the CAWP, the welfare of any wild horse placed in these facilities is endangered.	
70	American Wild Horse Campaign (AWHC)	For scientific, economic, and social reasons, the ten-year plan to reduce the wild horse population in the LFL JMA to the low AML of 99 horses should be eliminated from consideration in this EA. Achieving low AML would result in the removal of roughly 250 wild horses, a remaining density of one horse on roughly every 1,000 acres, and reduce the population to an unnaturally low population size that the NAS warned maximizes population growth rate. (Attachment 1). As such, if this roundup option is retained in the final EA, it is essential the BLM/USFS, at minimum, further analyze the following: ● Impacts of drastic reduction of population size on population growth rate; ● Impacts of drastic population reduction on genetic health of the populations within the JMA (beyond, and in addition to, the now dated 2012 work of Cothran); ● Direct impacts of helicopter drive trapping to the environment and the horses; and ● Economic and welfare concerns related to increasing the off-range holding population of wild horses. In short, if the BLM/USFS receives authorization to move forward with the roundup and removal of more wild horses in this action, the agency must justify how that decision is in line with the requirements of the WHA that require the BLM/USFS to manage wild horses at the minimum feasible level.	Refer to response to comment #24 regarding the RMP provisions to achieve low AML. Impacts to population growth rate, including population modeling for all alternatives analyzed, are discussed in section 3 of the EA and section 3 of the provided SI document. As stated in section 8 of the SI, Selectively applying contraception to older animals and returning them to the range could reduce long-term holding costs for such horses, which are difficult to adopt, and may reduce the compensatory reproduction that often follows removals (Kirkpatrick and Turner 1991). Refer to response to comment #2 regarding genetic diversity and population connectivity in the Little Fish Lake herd Refer to response to comment #39 regarding helicopter use during gathers. Impacts of helicopter drive trapping are analyzed in section 3 of the EA. Economic concerns regarding off-range holding are outside of the scope of this EA. The BLM takes the welfare of gathered animals seriously and will adhere to CAWP standards. CAWP standards can be found on the BLM website at https://www.blm.gov/programs/wild-horse-and-burro/comprehensive-animal-welfare-program.
71	American Wild Horse	**Economic and social impacts** Additionally, the EA must consider the social preference of American taxpayers,	Comment noted. Refer to response to comment #2 and #65.

	Campaign (AWHC)	88 percent of whom want wild horses protected and managed humanely on public lands. (Attachment 11) Congress has repeatedly instructed the BLM to implement comprehensive fertility control on the range, now and with the tools currently available. And, as mentioned, Congress dedicated up to $11 million in funding for implementation of humane fertility control vaccines in FY22. Thus, the option to implement vaccine based fertility control before, and perhaps even in place of a roundup and removal action, is now not only available but also cost-effective and in line with the wishes of the majority of American taxpayers and many members of Congress. In sum, in this EA, BLM/USFS should evaluate, in specific terms, how a proposed plan of utilizing a darting fertility control program in the LFL JMA will not only successfully manage wild horse population numbers without perpetual roundups, which are costly to American taxpayers and the horses themselves, but will also decrease unnecessary and wasteful spending of taxpayer funds.	
72	American Wild Horse Campaign (AWHC)	Even though the BLM/USFS dismissed raising the AML or gathering to AML from further analysis, the BLM/USFS's consideration of either of these alternatives did not consider them used in combination with a comprehensive PZP program. Thus, the BLM/USFS must further analyze an alternative to manage wild horses in the LFL JMA at least at the high AML of roughly 132 wild horses rather than reducing the low AML of 99 wild horses when a PZP program is used in the LFL JMA.	Refer to responses to comments #2, #24, and #65.
73	American Wild Horse Campaign (AWHC)	AWHC reminds the BLM/USFS that the low AML is the legal minimum that the BLM is required to manage on the range in any particular HMA, and therefore the BLM must ensure that it at least meets this requirement in the LFL JMA.	Thank you for your comment. Refer to footnote 2 of the EA describing "low AML" for the JMA. Within the 1997 RMP the definition of AML is given as "*the maximum number of wild horses and/or burros to be managed within a herd management area and has been set through monitoring and evaluation or court*

			order”
74	American Wild Horse Campaign (AWHC)	AWHC asks that the EA further prioritize alternative methodologies for wild horse removal including the exclusive use of bait/water trapping. Even though the BLM/USFS did not include this alternative, it is an important management tool to consider given that portions of the LFL JMA contain the Antelope Range and Fandango Wilderness Study Areas as well as Sage Grouse Habitat. Thus, the BLM must, at the very least, consider the use of bait and water trapping because, in addition to being a more humane practice, bait and water trapping could be significantly less stressful on the particular environment present in this LFL JMA. If a helicopter roundup is selected as part of the proposed action, The BLM/USFS should amend the EA to include an analysis of existing information available to determine if improvements could be made to reduce potential stress and harm to the horses during the roundup.	Refer to response to comments #63 and #70.
75	American Wild Horse Campaign (AWHC)	The EA fails to consider an alternative that would allow livestock grazing while compensating permittees for non-use in order to provide the agency time to address the necessary land use planning process for wild horses by giving wild horses a fairer share of AUMs in the LFL JMA. It is unreasonable the BLM/USFS to continue to allocate AUMs for livestock use in HMAs while the BLM/USFS removes wild horses toward unreasonably low AMLs. The BLM/USFS must demonstrate (providing empirical data in the EA for the proposed action) that the removal of wild horses is necessary to maintain or achieve a true thriving natural ecological balance.	Beyond the scope of this EA. Refer to response to comment #6 regarding managing resources for multiple use.
76	American Wild Horse Campaign	The EA should note that it is reasonably foreseeable that the BLM/USFS could release further management plans or amendments for the allotments that	Future changes related to livestock grazing are beyond the scope of this EA.

	(AWHC)	overlap the LFL JMA and establish different grazing systems in the future. As discussed, such potential changes in management of livestock and livestock stocking rates would constitute a future action that would affect the wild horses that share these public lands.	
77	American Wild Horse Campaign (AWHC)	The BLM/USFS must analyze how the implementation of any future range improvements, such as the development of additional water sources and removal of fencing, could affect the management of wild horses in the LFL JMA. Such impacts could be negative or positive, such as enhancing the ability of the wild horses in the LFL JMA to utilize their entire designated habitat area instead of forcing them to concentrate in certain areas or move outside of the boundaries... Thus, analysis of reasonably foreseeable range improvements and their impacts on wild horses is necessary in the final EA to ensure that the management plan preserves wild horse use in the LFL JMA.	Beyond the scope of this EA, refer to response to comment #51.
78	Coalition for Healthy Lands, Wildlife, and Wild Horses	Reduction or elimination of wild horses and livestock from critical sage grouse habitat is a priority. We are concerned about possible horse year round use of forage and water. We note the reduction of almost 50% use by one permittee and curious as to how the other permittee is able to utilize 97%. Fewer horses? Fewer AUMS granted initially or since reduced by BLM? The Coalition supports the gather and removal of excess horses, the use of fertility inhibiters on released mares and gelding males, the return to the land of 60% males and 40% females. Since not all horses are gathered in these projects, genetic variability and reproduction will continue to occur. The Coalition supports the use of PZP, Gona-Con, spaying and other safe fertility reductions. Mares should be given an opportunity to be free of bearing foals, particularly when food	Thank you for your comment. The BLM has not directed livestock use to be reduced- reductions in use have been voluntary. Refer to response to comments #6 and #52 regarding voluntary use reduction. Comments supporting management actions have been noted.

		and water are short and as they age.. Free-roaming horses maintained at safe grazing levels, are free of gathers, starvation, and thirst. The Coalition supports multiple use of public lands. The impact of many ”multiple” uses, however, such as recreation, roads, utility corridors, livestock, horses and burros, etc falls primarily on our wildlife and native plants which increasingly have no other place to live than public lands.	
79	Coalition for Healthy Lands, Wildlife, and Wild Horses	[support for FY2023 Appropriations for Wild Horse Management, submitted to members of senate appropriations committee] We urge this committee and other members of Congress to support the continuation of additional capacity for BLM to address this increasing problem for our nation’s valuable public lands. By continuing to provide sufficient annual funding for effective management of wild horse and burro populations we can achieve appropriate management levels to retain the health of our land.	Thank you for your comment.
80	Oregon Wild Horse Organization	BLM needs to develop an EIS not an EA. And that EIS needs to include a cost analysis of different alternatives, helicopter gathers versus PZP application on the range, and all fertility control or population control methods that would be included in the final plan need to be disclosed and discussed individually in this cost analysis.	Refer to response to comment #3 regarding development of an EIS. The Wild Free Roaming Horses and Burros Act (WFRHBA) does not include a cost-based decision-making process if excess horses are present.
81	Oregon Wild Horse Organization	This EA does not explain what horses will be permanently removed or released, nor does it explain when removed, where they will be removed to and how the BLM will provide for their future when holding facilities are reportedly already full causing stress on the wild horses & burro program budget. This does not provide assurance that removed horses will not end up being sent to slaughter.	Refer to table 1 of the EA which outlines numbers to be removed from the range. Which holding facility horses are sent to is determined later in the gather scheduling process once funding has been secured. Refer to response to comment #4.
82	Oregon Wild	It challenges the very act that was passed	The Wild Horse and Burro Act

	Horse Organization	in 1971 to protect these resources. In fact, given that nothing is specified this does not qualify as a plan and is not a plan, instead you should have a specific management plan that ends in no more roundups and on the range management with PZP.	(1971) directs the Secretary to immediately remove excess wild horses and burros. Refer to response to comment #2 regarding PZP.
83	Oregon Wild Horse Organization	The BLM Handbook 4700 at 4.2 C states. "*The AML shall be expressed as a population range (with an upper and lower limit) within which wild horses and burros can be managed for the long term*." This AML range has not yet been determined therefore BLM needs to evaluate the AML and amend the long-outdated RMP and LRMP being used in this decision. And this must be done before any gather can be planned to be in compliance with your own policies. We further suggest that BLM/FS amend the RMP/LRMP's to reflect management of this herd on the entire area it used in 1971 as directed by the 1971 Wild Free-Roaming Horses and Burros Act (WHBA). Which gave "principle use" of lands where the horses were in 1971 to the horses.	Changes at the Land Use Planning level (i.e. amending the RMP) are beyond the scope of this EA Refer to response to comment #27 regarding principal use.
84	Oregon Wild Horse Organization	You state in table 1 that the estimated population is 166, and you plan to remove 74 horses, this would leave an AML of 92 horses when the AML you state is 39 horses. The WHT you state has a population of 184 and this proposed plan would remove 177 horses leaving only 7 horses. That is well below the AML of 93. The totals you list in table 1 are an estimated population of 350 horses, and this plan is to remove 251. This leaves 99 horses which is below the AML of 132 horses. Therefore you would not be in compliance with your own policy to remove the horses to the AML, which you claim is a high end AML because you have also not met the requirement to provide the lower end AML. Leaving less than the low end AML is not in keeping with your own policies however, we have	Thank you for bringing this to our attention. Table 1 in the EA has been corrected to better reflect removal numbers per HMA/WHT within the JMA. As AML was set as a single number through a stipulated court agreement, this number represents "high AML". Refer to section 1.1 of the EA describing the AML range and "Low AML" for the JMA. Refer to response to comment #24 regarding RMP provisions regarding animal removals when AML is exceeded.

		no idea what that number is.	
85	Oregon Wild Horse Organization	You state in the proposed EA: "Based upon all current information available at this time, the BLM has determined that at least 189 excess wild horses above the low end of AML exist within the Little Fish Lake JMA" and also: "Excess wild horses are impacting/damaging private lands within the JMA. Moderate, heavy and severe utilization is evident on key forage species within JMA. Use by wild horses has caused riparian resource damage at Sevenmile Spring, Clear Creek, and Anderson Field" BLM has not provided quantitative or qualitative proof the wild horses have done any of the things they claim in these statements. There has been no study of what species utilizes key forage species, or what species damage to riparian areas, nor has BLM made clear if these public lands damage claims are impacted by livestock, or if that has been studied to determine individual species responsible for said damage.	The BLM has not directed livestock use to be reduced- reductions in use have been voluntary. Refer to response to comments #6 and #52 regarding voluntary livestock use reductions. Significant reductions in livestock use have occurred throughout many portions of the JMA from 2019 to the present making deteriorating conditions from livestock grazing unlikely in many portions of the JMA. Refer to response to comment #6.
86	Oregon Wild Horse Organization	You state in the proposed EA: "Monitoring and historical information indicate that future emergency removals would be necessary due to lack of water and/or forage if gathers are not conducted to reduce the population to AML." BLM cannot remove horses for anticipated changes in the future. BLM must provide evidence of excess before removals. Saying a thing "might happen" in the future is not cause for gather and removals.	Refer to response to comment #3 in regards to finding excess horses. BLM Handbook 4720.2 defines escalating problems as "conditions that deteriorate over time. The key indicators of escalating problems are a decline in the amount of forage or water available for wild horse or burro use, which results in negative impacts to animal condition and rangeland health." And goes on to state "Whenever possible, gathers to remove excess wild horses or burros should be completed before animal and land health conditions develop into emergency situations." As such, the BLM is directed to remove horses when a continued decline in rangeland conditions is documented. Furthermore, in *Animal Protection Institute*, 118 IBLA 63, 75 (1991),

			the Interior Board of Land Appeals (IBLA) found that under the WFRHBA of 1971 (Public Law 92-195) BLM is not required to wait until the range has sustained resource damage to reduce the size of the herd, instead proper range management dictates removal of "excess animals" before range conditions deteriorate in order to preserve and maintain a TNEB and multiple-use relationship in that area.
87	Oregon Wild Horse Organization	If conditions are anticipated to be affected by drought and lack of forage then the RMP must first be revisited and amended to reflect those anticipated changes for ALL species on the land, and all uses of the land.	RMP amendments are beyond the scope of this EA. Refer to response to comment #86 regarding management actions in response to anticipated conditions. While management decisions can be made to alter livestock use in response to changing conditions such as drought(i.e., numbers reduced, or livestock removed), the same is not true of management decisions regarding wild horses. Refer to response to comment #6 describing the difference between managing livestock and wild horses on public lands.
88	Oregon Wild Horse Organization	The fact that you state in the proposed EA "Animals Leaving the JMA boundary and remaining outside of HMAs/WHTs" proves that these horses are likely trying to use the entire area they have historically used to roam and find alternate sources of water and forage. So BLM needs to disclose to the public what the original area of use for this herd was. Are these horses remaining on the larger HA, or onto private lands which should be fenced out according to your state's fence out laws if private owners do not want the horses on their lands.	Wild horses leaving JMA boundary and remaining there indicate that range conditions within the JMA have become inadequate for their needs, thus they need to seek resources elsewhere. Impacts to fenced private land are discussed in section 3 of the EA and documented in photographs on pages 42-55 of the SI document.
89	Oregon Wild Horse	You state: "Within the 1997 RMP the definition of AML is given as "the maximum number of wild horses and/or	Refer to response to comment #84

	Organization	burros to be managed within a herd management area and has been set through monitoring and evaluation or court order" This is contrary to the BLM Handbook 4700 at 4.2 C states: "The AML shall be expressed as a population range (with an upper and lower limit) within which wild horses and burros can be managed for the long term."	
90	Oregon Wild Horse Organization	One of the biggest issues facing our country, and the rest of the world right now is the climate crisis and BLM is doing business as normal. There is nothing in this plan that discusses climate change, and how this plan would help mitigate climate change. There are studies that support wild horses healing the land, mitigating wildfires and increasing the spread of native plants. This plan is a continuation of BLM's narrow focus to remove horses and benefit the livestock industry.	Climate change is beyond the scope of this EA. However, in the context of a generally recognized trend that the Southwest USA is expected to experience warmer temperatures and lower overall water availability, it may be all the more important for wild horse population levels to be in line with available natural resources, to allow for a thriving natural ecological balance.
91	Oregon Wild Horse Organization	We do not support the use of GonaCon, as it is hormonal and changes mare, band and herd dynamics. GonaCon also is not for use on food, therefore, not for use in food animals and BLM has not provided any studies that prove it does not have feed through properties that could sterilize our predators, or a human should the horse later be removed and end up in the slaughter pipeline. What measures does BLM have in place to track horses treated with GonaCon to make sure they never get processed for human consumption until such time a study is provided proving it will not cause a human to become sterilized? Also how would the remote darters BLM has proposed to use for the application of GonaCon be used so that no dart goes into a water source, or drops to the ground before the product is injected into the horse, thus becoming a hazard to other species, humans or their pets who might step on it.	Refer to Comments #2, #5 and #6. The GonaCon vaccine is administered by hand-injection, as outlined in section 10 (Fertility Control Treatment (SOPs)) of the SI document, so there are no hazards to other species associated with GonaCon use under the proposed action. In registering GonaCon vaccine and PZP ZonaStat-H vaccines for use in wild horses and burros, the EPA determined that use of GonaCon is safe for the environment.
92	Oregon Wild Horse	We also do not approve of the use of helicopters to gather wild horses. There is	Refer to response to comment #63.

	Organization	no way to do a helicopter gather that is humane. There is no policy in place to check these horses before a gather to make sure that there aren't horses with pre-existing conditions that would prohibit them from being chased and stampeded for miles with conditions or injuries that would cause severe pain, further injury or death because of the helicopter use.	
93	Oregon Wild Horse Organization	This proposed EA has many legal issues we have mentioned above, and there is a simple NEPA violation that could have been easily corrected. That is the reference cited must be reasonably accessible to the public. We have provided a list of references cited that are not accessible in full, or at all, many are available in abstract but the reader must pay to buy the paper to read the entire publication. BLM must provide these references and this plan cannot move forward without the public having a chance to read those and comment.	All referenced material within the EA is available upon request at the Tonopah Field Office.
94	Oregon Wild Horse Organization	we can only support the NO Action Alternative. BLM needs to first revisit the RMP/LRMP and make adjustments for the current climate situation. Put in plans to adjust the AML to reflect principal use of the entire land mass used by the horses in 1971 and thus make the proper adjustments to AUM allocations and then develop AML per your Handbook as a range.	Adjustments to the RMP, as well as increasing AML, is beyond the scope of this EA. Refer to response to comments #6, and #43.

Appendix II. Effects of Wild Horses and Burros on Rangeland Ecosystems

The presence of wild horses and wild burros can have substantial effects on rangeland ecosystems, and on the capacity for habitat restoration efforts to achieve landscape conservation and restoration goals. While wild horses and burros may have some beneficial ecological effects, such benefits are outweighed by ecological damage they cause when herds are at levels greater than supportable by allocated, available natural resources (i.e., when herds are greater than AML).

In the biological sense, all free-roaming horses and burros in North America are feral, meaning that they are descendants of domesticated animals brought to the Americas by European colonists. Horses went extinct in the Americas by the end of the Pleistocene, about 10,000 years ago (Webb 1984; MacFadden 2005). Burros evolved in Eurasia (Geigl et al. 2016). The published literature refers to free-roaming horses and burros as either feral or wild. In the ecological context the terms are interchangeable, but the terms 'wild horse' and 'wild burro' are associated with a specific legal status. The following literature review on the effects of wild horses and burros on rangeland ecosystems draws on scientific studies of feral horses and burros, some of which also have wild horse or wild burro legal status. The following literature review draws on Parts 1 and 2 of the 'Science framework for conservation and restoration of the sagebrush biome' interagency report (Chambers et al. 2017, Crist et al. 2019).

Because of the known damage that overpopulated wild horse and burro herds can cause in rangeland ecosystems, the presence of wild horses and burros is considered a threat to Greater sage-grouse habitat quality, particularly in the bird species' western range (Beever and Aldridge 2011, USFWS 2013). Wild horse population sizes on federal lands have more than doubled in the five years since the USFWS report (2013) was published (BLM 2018). On lands administered by the BLM, there were over 95,000 BLM-administered wild horses and burros as of March 1, 2020, which does not include foals born in 2020. Lands with wild horses and burros are managed for multiple uses, so it can be difficult to parse out their ecological effects. Despite this, scientific studies designed to separate out those effects, which are summarized below, point to conclusions that landscapes with greater wild horse and burro abundance will tend to have lower resilience to disturbance and lower resistance to invasive plants than similar landscapes with herds at or below target AML levels.

In contrast to managed livestock grazing, neither the seasonal timing nor the intensity of wild horse and burro grazing can be managed, except through efforts to manage their numbers and distribution. Wild horses live on the range year round, they roam freely, and wild horse populations have the potential to grow 15-20% per year (Wolfe 1980; Eberhardt et al. 1982; Garrott et al 1991; Dawson 2005; Roelle et al. 2010; Scorolli et al. 2010). Although this annual growth rate may be lower in some areas where mountain lions can take foals (Turner and Morrison 2001, Turner 2015), horses tend to favor use of more open habitats (Schoenecker 2016) that are dominated by grasses and shrubs and where ambush is less likely. Horses can compete with managed livestock in forage selected (Scasta et al. 2016).

As a result of the potential for wild horse populations to grow rapidly, impacts from wild horses on water, soil, vegetation, and native wildlife resources (Davies and Boyd 2019) can increase

exponentially unless there is active management to limit their population sizes. For the majority of wild horse herds, there is little overall evidence that population growth is significantly affected by predation (NAS 2013), although wild horse herd growth rates may be somewhat reduced by predation in some localized areas, particularly where individual cougars specialize on horse predation (Turner and Morrison 2001, Roelle et al. 2010). Andreasen et al. (2021) recently found that some mountain lions (*Puma concolor*) prey on young horses, particularly where horses are at very high densities and native ungulates are at very low densities. The greatest rate of predation on horses was in the Virginia Range, where the state of Nevada manages a herd of feral horses that is not federally protected. Where lion predation on horses was common, Andreasen et al. (2021) found that female lions preyed on horses year-round, but 13% or fewer of horses killed by lions were adults. BLM does not have the legal authority to regulate or manage mountain lion populations, and it is not clear whether there are any mountain lions in the Little Fish Lake JMA that specialize on horse predation. Andreasen et al. (2021) concluded that "At landscape scales, cougar predation is unlikely to limit the growth of feral horse populations." Given the recent history of consistent growth in the Little Fish Lake JMA wild horse herd, as documented by repeated aerial survey, the inference that predation does not limit local wild horse herd growth rates apparently applies.

The USFWS (2008), Beever and Aldridge (2011), and Chambers et al (2017) summarize much of the literature that quantifies direct ecosystem effects of wild horse presence. Beever and Aldridge (2011) present a conceptual model that illustrates the effects of wild horses on sagebrush ecosystems. In the Great Basin, areas without wild horses had greater shrub cover, plant cover, species richness, native plant cover, and overall plant biomass, and less cover percentage of grazing-tolerant, unpalatable, and invasive plant species, including cheatgrass, compared to areas with horses (Smith 1986; Beever et al. 2008; Davies et al. 2014; Zeigenfuss et al. 2014; Boyd et al. 2017). There were also measurable increases in soil penetration resistance and erosion, decreases in ant mound and granivorous small mammal densities, and changes in reptile communities (Beever et al. 2003; Beever and Brussard 2004; Beever and Herrick 2006; Ostermann-Kelm et al. 2009). Intensive grazing by horses and other ungulates can damage biological crusts (Belnap et al. 2001). In contrast to domestic livestock grazing, where post-fire grazing rest and deferment can foster recovery, wild horse grazing occurs year round. These effects imply that horse presence can have broad effects on ecosystem function that could influence conservation and restoration actions.

Many studies corroborate the general conclusion that wild horses can lead to biologically significant changes in rangeland ecosystems, particularly when their populations are overabundant relative to water and forage resources, and other wildlife living on the landscape (Eldridge et al. 2020). The presence of wild horses is associated with a reduced degree of greater sage-grouse lekking behavior (Muñoz et al. 2020). Moreover, increasing densities of wild horses, measured as a percentage above AML, are associated with decreasing greater sage-grouse population sizes, measured by lek counts (Coates et al. 2021). Horses are primarily grazers (Hanley and Hanley 1982), but shrubs – including sagebrush – can represent a large part of a horse's diet, at least in summer in the Great Basin (Nordquist 2011). Grazing by wild horses can have severe impacts on water source quality, aquatic ecosystems and riparian communities as well (Beever and Brussard 2000; Barnett 2002; Nordquist 2011; USFWS 2008; Earnst et al. 2012; USFWS 2012, Kaweck et al. 2018), sometimes excluding native ungulates from water

sources (Ostermann-Kelm et al. 2008; USFWS 2008; Perry et al. 2015; Hall et al. 2016; Gooch et al. 2017; Hall et al. 2018). Impacts to riparian vegetation per individual wild horse can exceed impacts per individual domestic cow (Kaweck et al. 2018, Burdick et al. 2021). Bird nest survival may be lower in areas with wild horses (Zalba and Cozzani 2004), and bird populations have recovered substantially after livestock and / or wild horses have been removed (Earnst et al. 2005; Earnst et al. 2012; Batchelor et al. 2015). Wild horses can spread nonnative plant species, including cheatgrass, and may limit the effectiveness of habitat restoration projects (Beever et al. 2003; Couvreur et al. 2004; Jessop and Anderson 2007; Loydi and Zalba 2009). Riparian and wildlife habitat improvement projects intended to increase the availability of grasses, forbs, riparian habitats, and water will likely attract and be subject to heavy grazing and trampling by wild horses that live in the vicinity of the project. Even after domestic livestock are removed, continued wild horse grazing can cause ongoing detrimental ecosystem effects (USFWS 2008; Davies et al. 2014) which may require several decades for recovery (e.g., Anderson and Inouye 2001).

Wild horses and burros may have ecologically beneficial effects, especially when herd sizes are low relative to available natural resources, but those ecological benefits do not typically outweigh damage caused when herd sizes are high, relative to available natural resources. Under some conditions, there may not be observable competition with other ungulate species for water (e.g., Meeker 1979), but recent studies that used remote cameras have found wild horses excluding native wildlife from water sources under conditions of relative water scarcity (Perry et al. 2015, Hall et al. 2016, Hall et al. 2018). Wild burros (and, less frequently, wild horses) have been observed digging 'wells;' such digging may improve habitat conditions for some vertebrate species and, in one site, may improve tree seedling survival (Lundgren et al. 2021). This behavior has been observed in intermittent stream beds where subsurface water is within 2 meters of the surface (Lundgren et al. 2021). The BLM is not aware of published studies that document wild horses or burros in the western United States causing similar or widespread habitat amelioration on drier upland habitats such as sagebrush, grasslands, or pinyon-juniper woodlands. Lundgren et al. (2021) suggested that, due to well-digging in ephemeral streambeds, wild burros (and horses) could be considered 'ecosystem engineers;' a term for species that modify resource availability for other species (Jones et al. 1994). Rubin et al. (2021) and Bleich et al. (2021) responded by pointing out that ecological benefits from wild horse and burro presence must be weighted against ecological damage they can cause, especially at high densities. In HMAs where wild horse and burro biomass is very large relative to the biomass of native ungulates (Boyce and McLoughlin 2021), they should probably also be considered 'dominant species' (Power and Mills 1995) whose ecological influences result from their prevalence on the landscape. Wild horse densities could be maintained at high levels in part because artificial selection for early or extended reproduction may mean that wild horse population dynamics are not constrained in the same way as large herbivores that were never domesticated (Boyce and McLoughlin 2021). Another potentially positive ecological effect of wild horses and burros is that they, like all large herbivores, redistribute organic matter and nutrients in dung piles (i.e., King and Gurnell 2007), which could disperse and improve germination of undigested seeds. This could be beneficial if the animals spread viable native plant seeds, but could have negative consequences if the animals spread viable seeds of invasive plants such as cheatgrass (i.e,, Loydi and Zalba 2009, King et al. 2019). Increased wild horse and burro density would be expected to increase the spatial extent and frequency of seed dispersal,

whether the seeds distributed are desirable or undesirable. As is true of herbivory by any grazing animals, light grazing can increase rates of nutrient cycling (Manley et al. 1995) and foster compensatory growth in grazed plants which may stimulate root growth (Osterheld and McNaughton 1991, Schuman et al. 1999) and, potentially, an increase in carbon sequestration in the soil (i.e., Derner and Schuman 2007, He et al. 2011). However, when grazer density is high relative to available forage resources, overgrazing by any species can lead to long-term reductions in plant productivity, including decreased root biomass (Herbel 1982, Williams et al. 1968) and potential reduction of stored carbon in soil horizons. Recognizing the potential beneficial effects of low-density wild horse and burro herds, but also recognizing the totality of available published studies documented ecological effects of wild horse and burro herds, especially when above AML (as noted elsewhere), it is prudent to conclude that horse and burro herd sizes above AML may cause levels of disturbance that reduce landscapes' capacity for resilience in the face of further disturbance, such as is posed by extreme weather events and other consequences of climate change.

Most analyses of wild horse effects have contrasted areas with wild horses to areas without, which is a study design that should control for effects of other grazers, but historical or ongoing effects of livestock grazing may be difficult to separate from horse effects in some cases (Davies et al. 2014). Analyses have generally not included horse density as a continuous covariate; therefore, ecosystem effects have not been quantified as a linear function of increasing wild horse density. One exception is an analysis of satellite imagery confirming that varied levels of feral horse biomass were negatively correlated with average plant biomass growth (Ziegenfuss et al. 2014).

Horses require access to large amounts of water; an individual can drink an average of 7.4 gallons of water per day (Groenendyk et al. 1988). Despite a general preference for habitats near water (e.g., Crane et al. 1997), wild horses will routinely commute long distances (e.g., 10+ miles per day) between water sources and palatable vegetation (Hampson et al. 2010).
Wild burros can also substantially affect riparian habitats (e.g., Tiller 1997), native wildlife (e.g., Seegmiller and Ohmart 1981), and have grazing and trampling impacts that are similar to wild horses (Carothers et al. 1976; Hanley and Brady 1977; Douglas and Hurst 1983). Where wild burros and Greater sage-grouse co-occur, burros' year-round use of low-elevation habitats may lead to a high degree of overlap between burros and Greater sage-grouse (Beever and Aldridge 2011).

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